THE CHEMIST AND DRUGGIST

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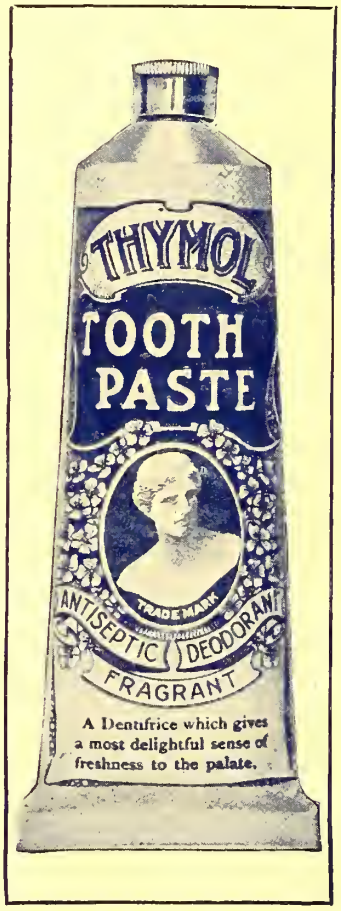
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THE CHEMIST & DRUGGIST SUPPLEMENT.

OFFICE: 42 CANNON STREET, E.C. SATURDAY, AUGUST 14, 1909.

PUBLISHER'S NOTICE TO ADVERTISERS.

Advertisers are desired to take note that the advertisements of Businesses for Disposal and Wanted, Situations Open and Required, Exchange Column, &c., belong to the **PREPAID CLASS, and to ensure the due insertion of the announcements the remittances must accompany the instructions.** A great amount of unnecessary correspondence is occasioned by the non-observance of this regulation, and the Publisher hopes that the advertisers will assist in the quick preparation and despatch of the Supplement by strictly observing this rule. Advertisements for the current issue cannot be received after 4 p.m. on Thursday in each week.

A Copy of this Supplement is inserted in every Number issued of "The Chemist and Druggist."

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2.—LONDON, N.W.—Dispensing and Retail Business; good opening for Photography; returns average over £500 per annum; *gross profit* 50 *per cent.*; well-appointed shop; moderate stock; price £350—less than the value of stock and fixtures.

3.—LONDON, S.E.—Ready-money Business; Retail and Prescribing; returns exceed £600 per annum; *profit (net)* £200; attractive window; excellent position; satisfactory reason for disposal; price £400; part payment if desired.

4.—RICHMOND (near).—Established Business; Retail, Dispensing, and Photographic; returns £700; good opening for modern trading; well-fitted shop, double fronted; terms, lease and goodwill £50, stock and fixtures at valuation.

5.—MIDDLESEX (few miles out).—Up-to-date Pharmacy; position unique; returns £1,500 per annum; *net profit* £350; comfortable residence, held on lease; price £900, or valuation if preferred.

6.—SOUTH LONDON.—Very old-established Business, chiefly ready money; returns average about £1,000 per annum; early sale desired; price £500, or valuation of stock and fixtures.

7.—LONDON (Northern Suburb).—Good middle-class Business; Retail, Dispensing, and Photographic; returns between £1,900 and £2,000 per annum; modern-fitted shop; roomy house; price £1,200.

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9.—CAMBRIDGE (near).—Mixed Business; entirely unopposed; returns £1,115; *net profit* £250; double-fronted shop; good residence; garden; rent £35; price £450; part may remain, say £150.

10.—DERBYSHIRE.—High-class Pharmacy; held by vendor many years; returns under management £700; the shop has double front, is well fitted, and fully stocked; valuation terms entertained.

11.—SOUTH COAST.—General, Retail, and Dispensing Business, situate in the centre of town; gross receipts about £1,200 yearly; *net profit* 25 *per cent.*; terms £60 and valuation of stock and fixtures; part payment if desired.

12.—BIRMINGHAM (near).—Vendor retiring; old-established Business; returns average between £1,000 and £1,100 per annum; intending investors with about £700 at command will find this a sound investment.

13.—WEST OF ENGLAND (Market Town).—Retail and Dispensing Business; all good-class trading; returns exceed £1,400 yearly; scope for development; terms, lease and goodwill £50, stock and fixtures at valuation.

14.—NORTH WALES (Health Resort).—Retail, Dispensing, and Agricultural trade; returns between £600 and £700 per annum; roomy house; garden; about the valuation of stock and fixtures would be accepted.

Particulars of any of the above will be furnished on application.

N.B.—NO CHARGE TO PURCHASERS.

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Messrs. O. & Co. desire to emphasise the necessity of a Periodical Statement of Account, by which means alone **Profit, the value of Business, &c.,** can be determined. Involving as this does the labour of Stocktaking and Valuation, it is often omitted, and eventually becomes the cause of **confusion and loss.**

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YORKS (on the borders of Lancs).—A very nice General Retail, with splendid sale of own Proprietaries; good house and large shop; returns under manager £925; very profitable; price £50, and stock and fixtures at valuation; good business to be done in Optics.

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LANCS.—General Light Retail in busy manufacturing town; nice shop; main street; low rent; returns £1,200; profitable; price about £550, or valuation; splendid opportunity.

HERTS.—Good-class Family Retail and little Photo; good shop; nicely fitted; low rent; returns £700; net profit about £200; price £400; genuine; chance seldom occurs.

SOUTH COAST.—Good General Retail Drug-store; returns as branch £1,200; net profit £290; price £60 and valuation; an excellent opportunity.

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LANCS.—Good General Retail, with Wholesale in Carded Goods and Sundries, with small shops; nice shop and premises; returns about £2,000; price valuation (about £500); a great bargain.

LANCS (NORTH).—Very good Country Retail, Agricultural, and Photo, in a pretty district; quite unopposed for miles; very nice house and good garden (fruit trees); returns £850; net profit £250; stock and fixtures at valuation; very old established; a rare chance.

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2.—KENT.—Good-class Light Family Retail and Dispensing Business; increasing; returns £1,000; net profit over £300; modern-fitted Pharmacy; well stocked; convenient house; price £760.

3.—HOME COUNTY.—Old-established Mixed Country Retail Business with valuable Specialities; returns over £1,100; nice house and garden; charming locality; best position; fully stocked; price £550; personally inspected.

4.—SOUTH MIDLANDS.—Good-class Retail, Dispensing, and Prescribing Business; returns £560; scope for much increase; net profit £200; good house and garden; modern Pharmacy; well fitted and stocked; price £520.

5.—SUSSEX (Market Town).—Good-class Retail, Dispensing, and Prescribing Business; in same hands many years; now retiring; returns about £850; can easily be made to do £1,100; fine position; large promises; price £500.

6.—SURREY (good Residential Town).—Good-class Retail, Dispensing, and Prescribing Business; capable of increase; net profit nearly £200; nice house and large garden; low rent; stock and fixtures worth £350; price £400.

7.—VICTORIA STATION (near).—First-class Retail and Dispensing Business; in same hands many years; returns £1,250; net profit over £400; excellent position; scope for much increase; price £1,000.

8.—LONDON SUBURB.—Light Family Retail and Prescribing; very few patents; returns over £600; net profit £240 clear; no near opposition; good house, etc.; price £325; books properly kept.

9.—LONDON, N.W.—Cash Retail and Prescribing Business in densely populated district; returns £470; no Poisons or Patents sold; net profit £180; low rent; price £225, or valuation; trial allowed.

10.—MIDDLESEX (Northern Heights).—Good-class Retail and Dispensing Business; in splendid position; rapidly growing district; returns £30 to £40 weekly; elegantly fitted shop, heavily stocked; price £1,250; personally inspected.

11.—CHESHIRE (Seaside Town).—Light Retail, Dispensing, and Prescribing Business; in very good position; returns £800; net profit £276; shop is beautifully fitted and well stocked; price £380, less than valuation.

12.—MANCHESTER (near).—First-class Retail Business, in the best position of town; returns average £1,750; books properly kept; stock and fixtures worth about £1,000; owner retiring; price £1,250.

13.—LANCS (Death Vacancy).—Well-established Light Retail Business, with large sale of own Specialities; returns under manager £925; has done £2,000; convenient premises; excellent position; price simply valuation.

14.—WEST MIDLANDS.—Good-class Retail and Dispensing Business; returns £700 to £800, increasing; net profit £220; main road position; good house; price £500; fullest investigation courted.

15.—YORKSHIRE.—Profitable Cash Retail and Prescribing Business; very few Patents; returns about £14 weekly; will soon do £20; low rent; growing district; no opposition; price £200, or valuation.

16.—LONDON, S.W.—Light Suburban Retail, Dispensing, and Prescribing Business; returns £1,350; net profit over £400; commanding shop; well fitted and stocked; price £950, or valuation terms arranged.

17.—LONDON, N.—Light Suburban Cash Retail Business in splendid main road position; returns £1,200 to £1,300 under manager; good profits; attractive shop, well fitted and stocked; price £750.

18.—STREATHAM COMMON (near).—Good-class Retail and Dispensing Business; returns £600; capable of increase; gross profits £254; good position; low rent; price £400, or near offer; books properly kept.

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COLONIAL BUSINESSES.

We call the special attention of our Colonial subscribers to the opportunity this Supplement affords when they wish to dispose of their Businesses, of getting into touch with likely buyers either at home or in the Colonies.

Replies to Advertisements may be addressed to this Office and forwarded to the Advertiser for an additional charge of 6d. Trade circulars and samples can in no case be forwarded.

BELFAST.—High-class Medical Hall for Sale in a main thoroughfare; health retirement; handsome and convenient modern fittings; good dwelling-house; introduction given. Apply, by letter only, "M.P.S.I.," c/o Barron, Harveys & Co., 6 Giltspur Street, London, E.C.

BIRMINGHAM (Pleasant Suburb).—Main road; good position; large population; Retail, Dispensing, Prescribing Business, with non-Telegraph Post Office worth £70 annually; good shop, well fitted; house, garden; moderate rent; rare chance for energetic, qualified, pushing man; proprietor retiring after 30 years' successful trade. Tomlinson & Sons, Bond Street, Constitution Hill, Birmingham.

DEVONSHIRE.—In a rapidly growing residential suburb of large town; good-class Retail and Dispensing Business; modern shop, well fitted and stocked; convenient dwelling-house with garden, front and back entrance; rental of shop and house, £32 per annum; sale price of premises (freehold), £650; stock (small) at valuation; an exceptional opportunity for an energetic young man of working up a thoroughly sound and profitable business. Apply, 134/31, Office of this Paper.

KENT (Fashionable Seaside Resort).—Light Retail and Dispensing Business; established many years and well situated in centre of town; returns £900; steady trade; good profits; low rent; on lease; comfortable house; for quick sale will accept £350 cash, which is much less than valuation; chance seldom offered. Address, "Bona fide" (159/25), Office of this Paper.

LANCASHIRE.—A Bargain.—Must sell through continued ill-health; returns average £500; net profit about £200; good sale of own Proprietaries and Drugs, few Patents; fullest investigation courted; valuation or the first reasonable offer; part can remain if necessary. "Rhei" (158/3), Office of this Paper.

LANCASHIRE (Pleasant County Town).—Sound, old-established Business for Disposal; also Branch with Post-office (which pays rent); net profits average £350; price valuation (about £600) and small goodwill. Hirst, Brooke & Hirst, Ltd., Leeds.

LIVERPOOL.—For immediate Disposal, an excellent Business, pleasantly situated in healthy, good middle-class district; fine commanding corner shop; electrically lighted; good commodious house; side entrance; Dispensing and Family, with Photographic and Optics; average gross profits £350; plenty of scope for energetic Pharmacist; price £350. Apply, "A. H. Jones," Blake & McKenzie, Ltd., Peter's Lane, Liverpool.

LONDON, S.W.—Main thoroughfare; in fashionable neighbourhood; old-established Retail Dispensing Business for Sale; full prices charged; good lease; low rent; vendor retiring; exceptional opening for energetic man. "H." (135/16), Office of this Paper.

LONDON SUBURB, W.—Profitable Cash Business; returns under Manager £400; compact, well-stocked shop; good house; rent £40; good chance for young energetic man; introduction given; price £160; less than valuation. Apply, 157/34, Office of this Paper.

LONDON, S.W.—An old-established Retail and Dispensing business in good-class neighbourhood for Sale; returns £1,100; or the proprietor would exchange for business in country town on mutual terms. Reply (in confidence) to 159/39, Office of this Paper.

LONDON Suburb.—Genuine Business; must be sold at once; returns £530; no opposition; low expenses; good profits; small but comfortable house, with garden; rent £30, on lease; part purchase money can remain; open to strictest investigation; price £300, or near offer. 159/37, Office of this Paper.

MID-CHESHIRE.—Attractive Central Pharmacy for immediate Disposal; lock-up shop, handsomely fitted, with post-office attached; returns £425, with steady increase; post-office returns £70 a year clear profit; satisfactory reasons for disposal; rent £25; vendor can arrange any terms of tenancy lease. Apply, "P. O." (157/5), Office of this Paper.

NORTH WALES.—First-class, old-established Dispensing and Optical Business, in beautiful locality and health resort, for immediate Disposal; excellent prices in Dispensing and Retail; valuable Proprietaries; very little opposition; rapidly increasing neighbourhood; fine premises at low rent; reasonable price; owner leaving country. Apply, "Lewis" (158/36), Office of this Paper.

ROTHERHAM (near).—Compact Business; carried on by lady; returns between £400 and £500; rent £26; good house; great scope for increase by qualified man; price valuation, about £200. Apply, Hirst, Brooke & Hirst, Ltd., Leeds.

WARWICKSHIRE.—Unopposed Mixed Country; Wines and Spirits, Tobacco, Photography; large studio; main road; new premises; rent £25; returns £650; price £160. 157/17, Office of this Paper.

CHEMIST Shop in Bradford for Disposal through death of proprietor; stock and fixtures at valuation; ingoing about £100; old-established, and affords capital opportunity. Address, "Chemist," c/o John Lund, F.S.A.A., 5 Charles Street, Bradford.

DENTAL Practice for immediate Disposal; small genuine concern; 21 miles from London; well established; vendor taking up medical work. Full particulars to bona fide buyers on application to 157/15, Office of this Paper.

DRUG-STORE; established 25 years; changed hands twice; returns £10; no registered poisons; rent £25 clear; corner shop, plate-glass windows; middle and working class Retail, all cash; scope for increase; no side-lines; nice house; having larger business in view, will accept £120 for quick sale (part could remain); trial allowed. "Yorkshire" (157/40), Office of this Paper.

FOR immediate Disposal, on account of failing health, a lucrative Medical Consulting Practice, carried on for 33 years by advertiser as "Medical Analyst"; this is a rare opportunity for a registered or unregistered Medical man or Prescribing Chemist. For particulars apply to "J. H.," 139 Albion Street, Leeds.

MANUFACTURING Town.—Light Retail and Dispensing, offering scope for Optics; rent moderate; price about £350; open to consider easy terms for payment. "Beta," c/o Evans Sons Lescher & Webb, Ltd., Liverpool.

MEDICAL Hall (Belfast) for Sale; Dispensing and Retail Cash trade; leading thoroughfare; 32 years established; Medical patronage; owner retiring; splendid opening for young man. Apply, Macfarlane, 133 Royal Avenue, Belfast.

BUSINESSES FOR DISPOSAL
(continued.)

PROPRIETARY Business, Wholesale, in Veterinary and Disinfectant Specialities; old established; good demand, London and country; capital required, about £300. For particulars apply to 157/27, Office of this Paper.

PROVINCIAL College of Pharmacy for Sale; in sound and progressive condition; easily worked; small capital only required, owner taking up manufacturing business. Apply, "College" (154/3), Office of this Paper.

SHREWD business men look a long way ahead; energy, ideas, and a little surplus capital are all that are required to quickly increase the turnover of a newly established business in a rapidly growing suburb of Yorkshire city; returns last twelve months £510, rent £30; price, valuation stock and fixtures; full investigation, good reasons for selling. "B." (158/19), Office of this Paper.

TWO Businesses for Sale; South Wales large manufacturing town; all ready-money trade; turnover £450 and £1,000; easy terms. Apply 156/80, Office of this Paper.

UNOPPOSED, good-class Country Business, with large sale of own Proprietaries; no opposition; good house, conservatory, outbuildings, with large garden stocked with fruit-trees; covered gateway for empties; rent £21; returns (with appointment worth £50) £600, every investigation offered; profits £300; a genuine concern, price £600. "Chemist" (159/5), Office of this Paper.

VALUATION only; good position in main street; up-to-date shop front with nicely fitted window; stock in good condition. Optics recently introduced, and increasing; few patents; principally Prescribing, own Specialities and Toilet; exceptionally profitable; good house, on lease; net rent £25 per annum. Particulars, "Practor" (159/30), Office of this Paper.

£10 down and 10s. per week for fourteen months will secure small Cash Retail, at present doing about £4 per week under inferior management; recently doing £9; densely populated Birmingham suburb; nicely fitted; purchasers in a position to put about £25 in stock into it will find this an unusually good investment. "Immediate" (157/8), Office of this Paper.

£150.—Genuine Bargain.—Ten miles from City, S.W.; nice little Cash business; few Patents; turnover £600 per annum; stock and fixtures worth the money; sufficient reason for disposing; house (7-roomed), long garden, &c.; main road, healthy district. 156/35, Office of this Paper.

£350 cash down will purchase a sound London Business in main road; returns nearly £1,100; net profit £325; total purchase £625, the remaining £275 by easy instalments; scope for increase; everything is modern and up-to-date; most exceptional opportunity. Only genuine buyers please apply, "A. L. O. E." (160/14), Office of this Paper.

£1,000 Returns.—London, S.E.—Old-established Dispensing for Sale owing to ill-health; gross profit (after rent) £375; opens for 72 hours per week; shut-up shop; what offers? no agents. Write, in first instance, with references, Didier, 153 Borough High Street, London, S.E.

£1,000.—In consequence of ill-health, a Dispensing and good Family and Retail Business, with large sale of own Proprietaries; well situated in a charming old city; the Pharmacy is beautifully fitted and the house most commodious; established over 50 years; fullest investigation; no agents. "Retlaw" (155/16), Office of this Paper.

BUSINESSES WANTED.

ADVERTISER requires Business showing £200-£250 profits; either General, Dispensing; town business or country; if latter must have scope for Optics, Photographic and Veterinary sales; Managership with view to succession entertained; with latter condition larger business entertained. "Pharmacist," 43 Tower Street, Winchester.

HOME COUNTIES or South of Birmingham.—Central position; town or country; doing upwards of £850, with scope especially for Optics. Particulars, fully as possible in first letter (strict privacy guaranteed) re lowest price for cash, agreement or lease, rent, rates, house (if any), and condition, 79 Sotheby Road, Highbury, London.

SALES BY AUCTION.

WELLS-NEXT-THE-SEA, NORFOLK.

TO be SOLD by AUCTION, at the CROWN HOTEL, WELLS, by GEORGE S. ANDREWS, on WEDNESDAY, the 18th day of Augnst, 1909, at 4 P.M., in one lot, all that exceptionally well-built FREEHOLD RESIDENCE situate on the west side of Staithe Street; also the spacious and well-lighted CHEMIST'S SHOP, and garden ground with warehouse, outhouses, and offices, also a walled-in Kitchen Garden containing 30 perches (more or less), well stocked with numerous young fruit trees, bushes, and shrubs now in full bearing; together with a small greenhouse, lean-to shed, which will be included in the purchase.

The Garden immediately adjoins the Residence, and could either be retained in cultivation or admirably adapted as a Building Site, having a fine frontage of about 70 feet to Staithe Street.

Now in the occupation of Mr. F. A. Cotton under a lease for 21 years from June 24, 1908 (determinable by the tenant at 7 or 14 years), at a rental of £50 per annum.

Further particulars of the Auctioneer and Messrs. E. B. Loynes & Son, Solicitors, Wells, Norfolk.

PREMISES FOR SALE.

TO Chemists (Manufacturing), Etc.—Deptford.—Splendid Business Premises to be Sold, with vacant possession; the valuable leasehold premises, No. 53 Broadway, Deptford, occupying the finest position in the locality, containing basement, lofty shop and upper floors, and capable of sub-division; price £3,500; £350 cash only required, balance by monthly payments, including interest spread over 20 years if desired; and making a total payment much under rental value; lease 44 years unexpired, at a ground rent of £120 per annum; caretaker on premises. For further particulars apply, H. Johnstone, 25 Moorgate Street, E.C.

FOR SALE.

SHOPFITTINGS.—Mahogany drug-drawers, with shelving above and lockers below (9 ft. 6 in.); shop-rounds, ointment-jars, syrup bottles, mirrors (60 by 52, 60 by 40, 30 by 22); also bent-glass show-case, mahogany desk and stand-up show-cases, 4-gal. carboys with stands. Apply Newton's Drug-stores, Monkton Road, Jarrow-on-Tyne.

LINCS.—Fixtures, Fittings, and Part Stock of Drug-stores in main street of large town; grand chance for new beginner; the lot £30; owner obliged to part. Full particulars, "Radix" (159/40), Office of this Paper.

TO LET.

NOTTING HILL, W.—Exceptional opening for Chemist, in a thickly populated district; fine corner shop, 50-ft. frontage, and rooms over; reduced rent; £60 per annum would be accepted from responsible tenant. Keys with the Agents, Rider & Sons, 128 Ladbroke Grove, W., and Kinghan & Lakeman, 10 South Molton Street, W.

TO Wholesale Chemists and others.—At Saltburn, North Yorkshire, in main business street, one minute from station, to Let, with immediate possession at reasonable rent, commodious five-storeyed block (in excellent condition, well lighted, lofty, and dry throughout), consisting of front shop (60 ft. by 25 ft.), 7 showrooms (total floor area of upwards of 12,000 square ft.), 3 warehouses (each 60 ft. by 18), 2 cellars (each 60 ft. by 20), large yard, stables, coach-house, etc.; fitted throughout with counters, cases, lockers, and trade requisites; excellent lift. Apply, W. Hornsby, Saltburn.

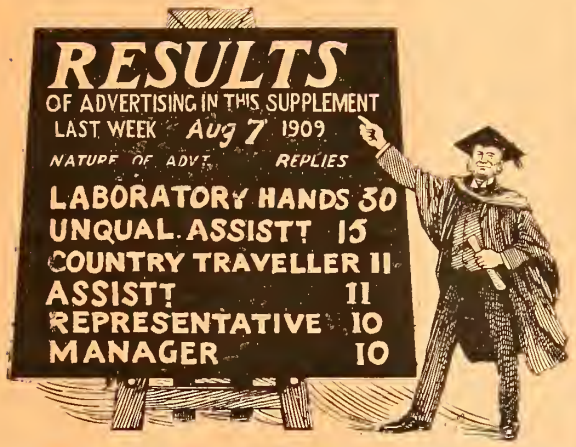
PARTNERSHIPS.

CHEMIST (qualified).—Opportunity occurs for Chemist, with £200 capital, to secure interest in company working a speciality, with excellent prospects. Write for interview, Chairman, Destroyer, c/o J. W. Vickers & Co., 5 Nicholas Lane, E.C.

SMART young business man wanted to join a limited company doing fairly large turnover; now wants pushing; to invest £1,000; expert buyer and organiser. Apply, giving particulars (in confidence), where gained experience (Stores preferred), age, and idea of remuneration, 159/20, Office of this Paper.

SITUATIONS OPEN.

3s. 6d. *for* **50** *words or less;* **6d.** *for every* **10** *words beyond, prepaid.*



This Blackboard demonstrates that Advertisers using these columns get a ready response to their announcements The figures only refer to some of the letters RECEIVED AT OUR OFFICE on behalf of advertisers who use a number or nom de plume.

RETAIL.

Replies to Advertisements may be addressed to this Office and forwarded to the Advertiser for an additional charge of 6d. Trade circulars and samples can in no case be forwarded.

TO SAVE TROUBLE.

Many correspondents answering advertisements in this Supplement enclose remittances to cover the cost of forwarding their letters to advertisers who prefer to be addressed c/o this Office. The Publisher desires to make it clear that *the Advertiser* pays postal charges in such cases, and perhaps this reminder will obviate the necessity of the constant return of remittances which forgetfulness of this fact entails.

ABERDEEN.—Junior Assistant wanted; good Counter and Dispensing experience essential. Full particulars of experience, age, height, salary required, when disengaged, Hunter, Chemist, 111 Union Street.

BAKEWELL.—Qualified Assistant wanted; outdoors; no Sunday duty; close 2 o'clock Thursdays. Please state age, height, salary required (outdoors), and references, to E. G. Carrington, Chemist, Bakewell.

BARRY, South Wales (Seaside).—Wanted, a smart, reliable Junior; in or out doors. State age, height, when disengaged, send photo, W. E. Rees, Pharmacist, Holton Road, Barry, Glam.

BIRMINGHAM.—Competent qualified Assistant (indoors) for first-class Retail and Dispensing business; of good address. Reply, enclosing carte, with full particulars, T. Chase, Pharmaceutical Chymist, Edgbaston, Birmingham.

BOMBAY.—Wanted, qualified Assistant (under 25 years of age) for a good Dispensing Business. Apply for terms and particulars to "R. L.," c/o S. Maw, Son & Sons, 7 to 12 Aldersgate Street, E.C.

BOURNEMOUTH.—Outdoors; Junior or Improver wanted in a high-class modern Pharmacy. Full particulars as to experience, reference, salary required, and photo, to J. K. Matterson, The Arcade, Bournemouth.

BRIGHTON.—Unqualified Assistant with good knowledge of Dispensing; indoors; no Store men need apply. Full particulars and photo (if possible) to Savage & Co., Pharmaceutical Chemists, Brighton.

BRIGHTON.—Assistant wanted; indoors; age about 24; accustomed to good-class Retail and Dispensing. Apply, stating age, height, salary required, particulars of experience, and if possible enclose photo, to Franklin (late Savory & Moore), 86 King's Road, Brighton.

BRISTOL.—Qualified Manager wanted for Branch; also qualified Assistant. State age, height, salary, experience, and enclose photo to Managing Director, Hodder & Co., 5 Nelson Street, Bristol.

BUXTON.—Competent Assistaut; good-class Dispensing business. Give age, height, references, salary required (indoors), and photo to A. Thresh, Chemist, Buxton, Derbys.

CALCUTTA.—Minor man with good experience required for Calcutta; age under 28; 4 years' agreement; passage paid out and home. Full particulars on application to 140/13, Office of this Paper.

DONCASTER.—Wanted, Junior or Improver; outdoors; Light Retail and Dispensing; some knowledge of Photography; no Sunday duty; easy hours, 8 to 7.30; Thursdays 1 P.M., Saturday 10. Apply, with full particulars, age, height, references, salary, etc., to Hodgson & Hepworth, Ltd.

EXETER.—Messrs. Stone & Son require a qualified Assistant. Apply, stating experience, etc., to 166 Fore Street.

HALESOWEN.—A. G. Glasspool, Ltd., require experienced Assistant for holiday duty; to commence August 23 inst. Terms and references to A. G. Glasspool, Halesowen, Birmingham.

HARWICH.—Junior (outdoors), first week in September; Light Retail and Dispensing, with Photography. Apply, giving experience, references, and salary required, Woodward, Chemist, Harwich.

HENLEY-ON-THAMES.—Junior; indoors; good Dispensing and Photographic; by beginning of September. State salary, etc., A. Cartwright, Chemist, Henley-on-Thames.

HYDE.—Wanted, end of August, for a good-class Mixed business in manufacturing town near Manchester, a smart, qualified Assistant; must be good Counterman and Dispenser; outdoors; reasonable hours; no night or Sunday duty; half-holiday weekly; comfortable berth to a suitable man. Send full particulars with photo in first letter, Geo. Wild, Chemist, Hyde.

INDIA.—A qualified Assistant wanted; 4 years' agreement; salary £200 first year and additional £20 each year; fare (P. & O. second-class) paid out and home. Apply, with photo and testimonials, to "R. L.," o/o S. Maw, Son & Sons, 7 to 12 Aldersgate Street, E.C.

LIVERPOOL.—Outdoor Assistant; unqualified; about 25. Full particulars to "Pharmacist," c/o Messrs. Hy. Jackson & Sons, School Lane, Liverpool.

LIVERPOOL.—Manager wanted immediately; also unqualified Assistant. State full particulars in first letter *re* age, salary expected, etc., to "Alpha," c/o Evans Sons Lescher & Webb, Ltd., Hanover Street, Liverpool.

LONDON, W.—Qualified Assistant as Junior required immediately. Apply, giving full particulars of experience, age, and height, to Roberts & Co., 76 New Bond Street, W.

LONDON, W.C.—Wanted, Part-time Assistant for few hours weekly evenings, also Saturday afternoon and alternate Sunday evenings. Apply personally, Burden & Co., Pharmacists, 41 Store Street, Bedford Square, W.C.

LONDON, N.W.—Assistant, about 22, indoors, with good-class Dispensing experience. Elmer Pettinger, 30 Rosslyn Hill, Hampstead, N.W.

SITUATIONS OPEN *(continued).*

LONDON, W.—At once, Junior for Store business; personal interview preferred. H. W. Cave, 372 Harrow Road, W.

LONDON, S.W.—Wanted, a thoroughly reliable unqualified Assistant, with good experience in Dispensing and Light Retail; age about 24-26; indoors. Apply Davies, 485 King's Road, West Chelsea, S.W.

LONDON, W.—Wanted, a smart Branch Manager (qualified) by September 4; must be used to a quick Store business; Dispensing, Photographic, and Optics; good encouragement to suitable man. Apply, giving full particulars, to Bruce's, Ltd., 308 Earl's Court Road, S.W.

LONDON, S.W.—Junior; part-time; outdoors; 12.30 to 5.30; usual particulars and salary required. Wilson, Chemist, 72 Emmanuel Road, Balham, S.W.

LONDON.—Locum, qualified, wanted, to commence Monday next. Also an unqualified man for same time; quick Store trade. Reply, stating age, salary required, and giving recent reference, to 160/18, Office of this Paper.

LONDON, S.E.—Smart qualified Assistant wanted; must be thoroughly reliable and able to take charge. Apply, Jones, 161 New Cross Gate, E.C.

LONDON.—Assistant, not necessarily qualified, with knowledge of Store trading and Photography, for small business; competent to take charge; good opening for competent man wishing to purchase by instalments or working for qualification; only letters stating age, experience, references, salary wanted, if married, and capital (not a *sine qua non*) acknowledged. "Statim" (160/20), Office of this Paper.

MANCHESTER.—Wanted, smart gentlemanly Assistant as Dispenser for first-class business; outdoors; easy hours; give full particulars. Apply 155/31, Office of this Paper.

MANCHESTER District.—Wanted, qualified lady Assistant for quick counter trade; half-day holiday weekly; no Sunday duty. Address, stating experience, age, and salary required, with photo, 159/19, Office of this Paper.

MANCHESTER District.—Wanted, qualified Assistant for quick cash business; must be a worker, good salesman, steady, and trustworthy; no Sunday duty; half-day holiday weekly; good salary given to a suitable man; outdoors; permanency. Address, stating age, height, experience, reference, salary required, with photo. 159/91, Office of this Paper.

MIDDLESEX, N.E.—Unqualified Assistant wanted (outdoors) for cash Family business; counter, stock, and window; good references essential. State salary required and experience, 156/39, Office of this Paper.

NORFOLK.—Locum wanted, immediately (knowledge of Postal work preferred, but not essential). State age, terms (outdoors), and references, Camm, New Buckenham, near Attleborough.

NORTHAMPTON. — Wanted, immediately, qualified Assistant (indoors). State age, salary, etc., Wm. Lucas, Medical Hall, Kettering Road, Northampton.

PARIS.—Locum-Tenens, with good references, wanted for 18 days, early in September, in English Pharmacy; knowledge of French essential and German an advantage. Pepper, 8 Rue d'Argenteuil, Paris.

PETERBOROUGH.—Wanted, a qualified Assistant; outdoors. Please give usual particulars as to age, experience, salary required, etc., Hall (late Willson), Pharmaceutical Chemist, Peterborough.

READING.—Wanted, young Assistant as Locum for a fortnight. State salary required and send references to Davies, The Redlands Pharmacy, Reading.

REDCAR.—Good Junior Assistant; outdoors; end of August; good-class Dispensing; must be neat and reliable. State salary, with reference and photo, C. J. Allan, Pharmacist, Redcar.

ROME.—Qualified English Assistant for first-class business wanted for the season; must speak fluently French and, if possible, German, and have thorough experience in International Dispensing; entrance as soon as possible; travelling expenses paid. Apply, with reference, to Geo. Baker & Co., Via Terme 92, Rome.

ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Male Dispenser required; candidates must hold Minor qualifications, and be willing to engage for 12 months; salary £60 per annum, with rooms, board, and washing. Applications, stating age, with testimonials (limited to 5), to be sent to the undersigned before the 24th August. T. A. Fisher Hall, Secretary. August 10, 1909.

SOUTH AFRICA.—First-class qualified Assistants open to accept situations in this rising Colony, should apply to Leunon, Ltd., 54-58, Q. Elizabeth Street, S.E., who frequently hear of good openings.

SOUTH WALES.—Capable qualified Assistant wanted, with view to purchase or otherwise; sober man; good salary given. Apply, 156/8, Office of this Paper.

SOUTHEND-ON-SEA.—Assistant wanted with knowledge of Photography. Apply, with full particulars, to G. R. Dawson, Pharmacist, 42 High Street, Southend-on-Sea.

SWITZERLAND.—Wanted, an English qualified Assistant, with Continental experience and speaking French fluently. Send particulars as to age, salary, and copy of references, together with photo, to the British and American Pharmacy, H. Masset, Lausanne.

SWITZERLAND (Lake of Geneva).—Wanted, for October 1, qualified Assistant, desirous of obtaining Continental experience; salary 200 francs a month (outdoors). Please give references and enclose photo, Grande Pharmacie, St. Martin, Vevey, Switzerland.

TUNBRIDGE WELLS.—Qualified Assistant for high-class Dispensing business. State usual particulars and salary required to Howard & Son, Pharmacists, Tunbridge Wells.

WEST BYFLEET, SURREY.—S. Browning Moss requires a tall, smart, and gentlemanly Assistant; indoors; unqualified; must be a reliable Dispenser; high-class Dispensing and Family business, in delightful country; a gentleman would find it a very comfortable berth. Apply personally, or state all particulars and enclose photo (to be returned).

WIMBLEDON and Richmond.—At once (indoors) or early date; two smart Assistants, about 22; accustomed to Dispensing and Counter; weekly half-holiday; two nights off at 6 P.M.; alternate Sunday duty in the evening. Blanchford, Chemist-Optician, 76 High Street, Wimbledon.

YORK.—Wanted, at once, smart, gentlemanly Assistant; indoors; used to good Family business with Prescribing; comfortable home; no Sunday duty. Apply, stating full particulars, salary required, with references, and photo if possible (to be returned), to John Saville & Sons, Chemists, York.

A SMART up-to-date qualified man as Branch Manager, who can produce good credentials. Apply, with all particulars, to Griffiths, Chemist, Droylsden.

A QUALIFIED Assistant with good recent references; outdoors. Kindly apply, with all particulars as to age, height, salary and experience, to Parson C. Baker, 174 Victoria Street, S.W.

ASSISTANT; qualified; outdoors; well up in all branches of the business; good salary to suitable man; duty twice a week; Sunday divided between 3; early afternoon weekly; 14 days' annual vacation. Fullest particulars as to age, height, reference, and photo, Stonham & Son, Maidstone.

DISPENSER wanted; Doctor's practice; must be good Extractor; whole time; no Sunday work; £1 per week and commission; smart young man should make £2 to £2 10s. per week. Apply, "X." (134/51), Office of this Paper.

HOLIDAY Junior.—Wanted, a Junior as a Holiday Assistant for about a month from the end of August or beginning of September; one who has had some Dispensing experience. State age and experience, when disengaged, how much time at disposal, salary required, including railway expenses, enclose photo (which will be returned), references required, total abstainer preferred, Cumber, Pharmacist, Winton, Bournemouth.

J. & J. HASLETT, LTD., North Street, Belfast, require a qualified Manager for their Drug and Sundries department. Apply by letter, stating experience, etc.

JUNIOR Assistant; outdoors; good-class Dispensing, Photography; end of month. Salary, photo, and particulars, Simpkins, Chemist, Stourbridge.

MR. STAMP has a vacancy for a qualified Assistant; indoors; no Sunday duty; also next week for qualified Locum. Apply to Mr. Stamp, Pharmaceutical Chemist, High Street, Hampstead.

MANAGER, immediately, for business on South Coast; married; qualified; good Prescriber, Extractor, Stockkeeper; steady, reliable, and energetic; comfortable berth; permanency; salary £2 commencing, house and gas, 10 per cent. on increase over present returns; good scope; large increase certain. Age, height, photo, references, and all particulars in first instance, Willis, Chemist, Cheltenham.

QUALIFIED Manager for Branch wanted; house rent free. State salary, references, Wands, Leicester.

PATENT Medicines.—Smart Saleswoman required to take charge of department and assist in Buying; must thoroughly understand the trade and be accustomed to a quick turnover. Apply, stating age, references, and salary required, to Lewis's, Ranelagh Street, Liverpool.

WANTED, qualified Junior, outdoors preferred, early in September. State age, experience, and salary, to Horrell & Goff, Pharmacists, Dartford.

WANTED, Manager for small business in S.W. district of London; young man preferred. Apply, giving references and full particulars in first letter, to Richards, 232 King's Road, Chelsea.

WANTED, a smart, energetic Assistant (qualified), capable of taking charge; in or out doors; character must bear the strictest investigation. "Rex" (159/33), Office of this Paper.

WHOLESALE.

CONTINENT.—Wanted, smart qualified Assistant with Laboratory experience, especially in the preparation of Chemists' Specialities; good position for suitable man. Give full particulars and enclose photo (which will be returned), 153/2, Office of this Paper.

COUNTRY Traveller required with good connection for own-name Soaps and Perfumery; the right man will be liberally dealt with as regards salary, commission, and expenses. Apply, stating full particulars (in confidence), to "C. T." (124/37), Office of this Paper.

DRUGGISTS' Sundries; smart Assistant, used to good-class trade, required at counter; preference given to one with all-round knowledge. State full particulars in writing only, "M. W. S.," c/o C. J. Hewlett & Son, 35-42 Charlotte Street, E.C.

MANUFACTURERS of choice assortment of patented novelties in Perfumery (all grades) specially suitable for new season's trade require Representation by energetic Travellers with good connection among Retail Chemists, on liberal commission basis. "Perfumeries" (154/18), Office of this Paper.

PACKERS and Warehousemen wanted; must be quick and used to Druggists' Sundries. Apply, by letter only, to "Contracts," 33 Mortimer Street, W.C.

SMART Traveller for country required, with sound connection, to carry as side-line Proprietary Skin Ointment; well-known and excellent seller; good opportunity for energetic man; commission and part expenses. State age, experience, references, etc., 134/49, Office of this Paper.

THREE Representatives required by old-established Wholesale Druggists for Scotland, Lancashire, and S. Wales; must have connections and an up-to-date knowledge of the trade, including Packed Pharmaceutical, Toilet, and Perfumery goods. "Resource" (160/22), Office of this Paper.

TRAVELLER required, for London and suburbs only, by large firm of Toilet-brush manufacturers; part expenses and commission; must show proof of undoubted sound connection among Chemists, drapers, and stores, and able to carry samples; highest references required. Reply, "Toilet Brushes" (135/25), Office of this Paper.

WANTED, someone with expert knowledge in the manufacture of Cod-liver Oil Emulsion to start Department for manufacture of same on a large scale; must have first-class knowledge of suitable formula and up-to-date plant, etc. Apply, 135/23, Office of this Paper.

WET Floor Assistant required by old-established City Wholesale firm; age about 21. Apply, stating experience, etc., "Glycerine" (135/24), Office of this Paper.

WHITWORTH, HILLYARD & WADE, LTD., are open to arrange with experienced Travellers (now holding other suitable commissions) for the sale of their popular "WANG FOO" China Tea in districts not already covered; 25 per cent. of the net profits and part expenses allowed; Agencies are being readily taken up among the best-class Retailers, to whom every assistance is given in advertising. Address, St. Dunstan's House, Idol Lane, E.C.

YOUNG man, aged 18 to 20, required in Valuer's office; must have been in the Retail and be smart, quick at figures, and a good writer. State experience and salary required to "Salol" (156/34), Office of this Paper.

SITUATIONS WANTED

(Colonial, Indian, and Foreign).

1s. for **12** words or less; **6d.** for every **10** words beyond, prepaid. Replies addressed to this office will be forwarded to the advertiser for an additional charge of **6d.**

This heading is reserved for assistants seeking situations in the British Colonies, India, and Dependencies or elsewhere abroad.

FRANCE.—Pharmacist desires engagement, Paris or Riviera, October 1; West-end and German experience; fluent German and little French. Apply, "Cymro" (158/18), Office of this Paper.

ASSISTANT, unqualified (22), tall, gentlemanly, willing, high-class Store experience, also Agricultural, Photographic, Optics, seeks situation abroad; India or Far East; good references. Particulars to "Initiative" (155/38), Office of this Paper.

SITUATIONS WANTED.

1s. *for* **12** *words or less;* **6d.** *for every* **10** *words beyond, prepaid.*

[HOME.]
RETAIL.

S. F. CLARK will be open for engagement in September; Birmingham, London, or Manchester; city, country, and seaside experience; highest references. C/o W. E. Humphrey, Chemist, Cleethorpes.

JUNIOR; unqualified; 4 years' good experience; 22; tall. Evans, Preswylfa, Llanfair, Welshpool.

BRADFORD (Yorks) or district; 8 years' experience; Photography; outdoors. 156/18, Office of this Paper.

34; exceptional varied experience; about August 21; unqualified. "Locum," 146 Philip Street, Newcastle-on-Tyne.

CHEMIST-OPTICIAN, Minor, D.B.O.A. (25), wishes situation about October. "Glasgo" (153/25), Office of this Paper.

LADY Dispenser requires post with medical man; experienced; good testimonials; Hall certificate. "P." (156/13), Office of this Paper.

SITUATIONS WANTED (*continued*).

PART-TIME; evenings or night relief work; permanency; first-class experience; references. "Statim" (156/16), Office of this Paper.

LOCUM; August-September; Ph.C. N.Z.; thoroughly experienced in every department; take any position. 155/40, Office of this Paper.

MANCHESTER or district; Part-time preferred; Dispensing or Retail; 8 years' excellent experience; tall. "Physostigma," c/o Mr. Mason, 124 Spa Road, Bolton.

ASSISTANT; 36; experienced in Dispensing, Counter, and Photographic trade; capable, energetic, unqualified. "Statim," 22 Surrey Road, Bishopstone, Bristol.

NOTTINGHAM or District.—Complete apprenticeship September 9; time for study; in or out; highest references. "J.," 44 Dunkirk Road, Dunkirk, Nottingham.

24; experienced; 8 years London and provinces; Dispensing, Photographic, and Counter; excellent references; outdoors preferred. Gover, 52 Ranelagh Road, Ealing, W.

QUALIFIED; 24; tall; disengaged early September; experienced; excellent references; South Wales or West of England preferred. Lloyd, 153 Bute Street, Treherbert, Glam.

UNQUALIFIED; 21; good all-round experience; 7 years' references; London preferred but not essential; outdoors; permanency; interview if desired. 155/5, Office of this Paper.

ASSISTANT or Manager (30), unqualified, 5 ft. 10½ in., Dispensing, Photography, and Optics, requires permanency; outdoors; excellent references. "W. L.," 59 Oakland Road, Dovercourt.

MANAGERSHIP; experienced Pharmacist; 36; tall; good appearance and address; permanency; married; disengaged September 4, or earlier. "Chemist," 40 Grange Road, Norton, Stockton.

YOUNG German Druggist (18), industrious, well recommended, desires situation from October 1 in Wholesale or Retail business; indoors; low wage. Reply, Oskar Losen, Berlin, Dresdenerstr. 78.

PART-TIME situation desired; Nottingham or near; 12 years' good experience, Dispensing, Photography, etc.; references; moderate salary. "Student," Chaddesden House, Loscoe, Codnor, Derbyshire.

DISPENSER; doctor or institution; quick, accurate; married; 30; abstainer; splendid practical experience; hospital and private practice; unqualified; references. "Cantab.," 95 Cecil Road, Northampton.

ASSISTANT or Branch; 25; unqualified; 9 years' experience, Photography, Dispensing; abstainer; married; permanency; College town preferred; disengaged; references. "W. A. B.," Hopetown Post Office, Normanton.

MANAGING Assistant; 30; tall; thoroughly competent; smart Window-dresser, Dispenser, and Counterman; disengaged shortly; good references; permanency only; unqualified; 16 years' experience; outdoors. Hodgkiss, 1 Whitehouse Villas, Clarendon Road, Croydon West.

SEPTEMBER 13.—Junior, first-class experience, requires situation; good-class Dispensing business; hours moderate; highest references; 30s. (outdoors). Reply "Aurum" (157/29), Office of this Paper.

TO Surgeons.—Locum Dispensing wanted by qualified Chemist, who is also a Senior Medical Student, and requires Midwifery cases at same time; London only. "Assistant," 157 Vaughan Road, Harrow.

ASSISTANT, unqualified, having complete Dental plant, would assist in Retail and introduce Dentistry; salary required and divide dental profits; seaside or country preferred. "Profitable," c/o Newling, 7 Broadway Mansions, Winchmore Hill, N.

LIGHT permanency (outdoors), provinces, by experienced Pharmacist; 35; low salary for short hours; 20 years' good-class experience; highest references; married; abstainer; disengaged September 4. "Qualified" (157/9), Office of this Paper.

LOCUM; disengaged August 16; long experience; terms right. 9 Hudson Grove, Leeds.

SMART Manager; 26; in or near London. "Pharmacist," 14 Merton Road, Wandsworth.

LOCUM, Manager, or Senior; abstainer; married; 37; free 23rd. "G.," 62 Hill Road, Wimbledon.

LOCUM Chemist or Dispenser Surgeon; qualified. Leach, 69 St. Thomas Street, Portsmouth.

LOCUM; qualified; disengaged August 24 to September 4. Hinderson, German Hospital, N.E.

LOCUM; unqualified; disengaged; capable. If at once, wire Stevenson, Arundel Street, Nottingham.

DISPENSER, Locum, or permanent; qualified; disengaged; 30. "Durley," Seymour Road, Hampton Hill.

UNQUALIFIED; 32; all-round experience; country preferred. "Mistura," 292 Dallow Street, Burton-on-Trent.

LADY Dispenser requires post; certificated; good testimonials; London preferred. "T.," Forelacky, Eastbourne.

COMPETENT, thoroughly experienced; permanency; unqualified; outdoors; 28. Wild, Audley Road, Colchester.

ASSISTANT; unqualified; excellent experience; Retail, Dispensing; reliable. Montague, 23 Broadway, Southall.

MANAGER; qualified; 32; re-engagement; experienced; married; excellent references. "Modern," 23 Bond Street, Hull.

JUNIOR; 21; disengaged; Dispensing, Photography; Bristol or district preferred. "H. C.," c/o Smart, York Road, Bristol.

RELIABLE, unqualified Assistant; Dispenser, Counterman; knowledge of Photography. "Aspirin," 14 St. Aldates, Oxford.

DISPENSER and Surgery Attendant; Accoucheur; have resided at surgery several years. "W. H.," 26 St. Paul's Road, Canonbury, N.

AS Assistant or Locum; aged 22; 8 years' experience; unqualified; disengaged August 16; London or seaside. "R. D.," c/o Mann, Pharmacist, Herne Hill, S.E.

MANAGER; 46; married; experienced; abstainer; Minor; 7 years in present situation; Midlands preferred. Troughton, 15 Owen Road, Wolverhampton.

LOCUM; disengaged from August 30 until September 20; experienced; qualified; good references. "A.," 41 Palmerston Road, Sparkbrook, Birmingham.

RELIABLE Assistant; 23; good Counterman, Dispensing, Photography; window-dresser; linguist. "Phenazonum," 186 Mount Pleasant Road, Tottenham, N.

QUALIFIED; references; abstainer; disengaged September; outdoors. If replying, please state particulars of business, Cundall, c/o Parker, Chemist, Acomb, York.

JUNIOR; 8 years' all-round experience; Swiss; speaks German, French, and English; 1 year's good London references. "Cosmo," 8 Ferndale Road, Clapham, S.W.

WANTED, situation as Manager; Major qualification; married; abstainer; satisfactory references. Address "Shamrock," c/o Evans Leseher & Webb, Hanover Street, Liverpool.

ASSISTANT (Senior) or Dispenser; 28; thoroughly experienced; West-End and provinces; good address; disengaged early September; outdoors. "Argyrol," 12 Merton Avenue, Chiswick, W.

A FRENCH Pharmacien requires post as Assistant; excellent references; 8 years' practice. 156/31, Office of this Paper.

ASSISTANT; experienced; 5 ft. 8 in.; knowledge of French; 23. "Cascara," 38 Camberwell Road, S.E.

ASSISTANT; 38; disengaged; experienced; references; town, country. Dale, 98 Mildmay Road, N.

EXPERIENCED Locum; 29; qualified; September 14; highest references. 6 Arthur Street, Loughborough.

LOCUM; qualified; disengaged; moderate terms. Address, "Rhei," 34 Ellingham Road, Shepherd's Bush, W.

GENTLEMAN, engaged afternoons, is open to berth as Dispenser to Surgeon or Chemist. 160/16, Office of this Paper.

JUNIOR (22), disengaged, desires post, Manchester district, with time for study. Address, 158/35, Office of this Paper.

JUNIOR, knowledge Photography, Dispensing; Counter experience required. Clark, 6 Cherry Street, Birmingham.

WHOLE or Part time; disengaged; outdoors; 32; unqualified; moderate terms. "J. K.," 37 Kenton Road, Hackney.

M.P.S. (30) requires post as Manager; Yorkshire or Midlands; good all-round experience. 156/9, Office of this Paper.

LADY Dispenser and Bookkeeper desires post with doctor or institution; excellent testimonials. 157/20, Office of this Paper.

JUNIOR Assistant; 21; good Dispensing and Counter experience, knowledge of Photography. "Kaolin" (158/32), Office of this Paper.

EVENING Dispensing; night work or relief; London; first-class and varied experience. "Student" (160/8), Office of this Paper.

LOCUM; August 23 to September 11; experienced; tall; 22. "Locum," c/o Messrs. Keene & Ashwell, South Molton Street, W.

UNQUALIFIED Assistant; 35; Store experience; outdoors; London, South Coast, or Abroad. "F.," 64 Rossiter Road, Balham, S.W.

26; unqualified; 10 years' experience; good references; Dispensing, Counter, Window-dressing, Photography. Address, 158/9, Office of this Paper.

NOTTINGHAM or near.—As Locum or permanency; long experience; good Prescriber; first-class references. "Statim" (158/20), Office of this Paper.

YOUNG lady (22) seeks engagement with Doctor or institution; unqualified; 4½ years' experience; knowledge of Bookkeeping. Apply, 158/33, Office of this Paper.

GERMAN Chemist (25), energetic, speaking English, wants engagement in Dispensing business as Assistant; salary no object. 160/13, Office of this Paper.

FIRST-CLASS Dispensing experience required in good London business; part-time; no salary required if good experience is offered. 157/39, Office of this Paper.

BUYER and Manager for Multiple-shop Company (21) requires similar situation; Major qualification; all particulars in confidence. Address, 158/22, Office of this Paper.

JUNIOR (19½), three years' experience, wants situation in a good-class town or country business; indoors; good reference. Apply, 156/35, Office of this Paper.

UNQUALIFIED; 27; Counter, Photography; good all-round and high-class Continental experience; energetic; disengaged; excellent references. 159/1, Office of this Paper.

COMPETENT Assistant; 28; single; abstainer; excellent references; good Dispenser, Salesman, Photographics; at liberty Saturday week. Nicholson, 63 Stephens Road, Tunbridge Wells.

DISENGAGED; unqualified; several years' experience. R. M. Lelean, 11 Princess Road, Leicester.

UNQUALIFIED Assistant; disengaged; used to Mixed Country business. Vawser, Elwyn Road, March.

QUALIFIED; 29; first-class London and Continental experience; fluent French. 147/15, Office of this Paper.

PART-TIME or Locum, middle-aged, desires appointment; Chemist, Doctor, etc.; terms reasonable. 160/24, Office of this Paper.

DISENGAGED August 28; Manager or otherwise; Locum or permanency; unqualified. "Extractor," 68 Norman Road, Ilford Lane, Ilford.

JUNIOR; free Thursdays 2 to 10, or Tuesdays 7 to 10; not afraid of work; good Stockkeeper; steady; tall; obliging. 160/19, Office of this Paper.

A YOUNG Swiss Druggist, speaking German, French, and English, seeks London position early in September. "J.," 59 Christchurch Street, Ipswich.

EXPERIENCED; 14 years in last situation; aged 39; unqualified; has managed various branches; other good references. "W. G. S.," Victoria Chambers, Paignton.

MANAGER or Locum; experienced Buyer, Prescriber, and Extractor (own instruments); disengaged. Mr. Watson, Registered Chemist and Dentist, 851 Ashton Old Road, Manchester.

ADVERTISER is open for Locum or permanent engagement; a thorough expert; particularly adapted to increase business; highest references. "G.," c/o Prouden, Stroud Green Road, N.

DISPENSER; 30; holiday or Locum; day or week; experienced in Institution Surgery and Chemists'; highest reference. Write or wire, "Dispenser," 38 Sutherland Square, Walworth, S.E.

ASSISTANT; 24; reliable; good all-round country and town experience; Photography; disengaged shortly; good references; moderate salary. "Assistant," Winfield, North Road, Midsomer Norton.

QUALIFIED; age 22; 5 years' high-class Retail and Dispensing experience, London and provincial; Photography; highest references; outdoors; South Coast preferred. "Pharmacist," 30 Gladys Avenue, North End, Portsmouth.

JUNIOR requires position with pharmacist; aged 20; Photography, Extractor; height 6 ft.; 4 years' experience in good-class Pharmacy; excellent references; disengaged August 28. "Phenazone," Fern Bank, Park Grove, Barnsley.

WHOLESALE.

MAJOR (28), experienced, seeks post; Warehouse or Laboratory. 158/10, Office of this Paper.

EXPERIENCE in good Wholesale Laboratory required by young Major student. "J," 1 Lavender Hill, S.W.

ALL-ROUND Assistant and Stockkeeper; disengaged; suit small Wholesale; City references. 159/26, Office of this Paper.

YOUNG man desires Agency for Manchester district; well versed in the trade. "Opium," c/o Withnall, Ltd., Chemists, Chorlton, Manchester.

CHEMIST (30), with large Wholesale experience, desires post in Buying department of good house; capable and energetic; highest references. 157/36, Office of this Paper.

TRAVELLER, representing a well-known Drug firm in South Wales, desires additional Representation on same ground; small expenses and commission. 157/31, Office of this Paper.

TRAVELLER, with excellent connection, wishes some additional commissions for North of England and Scotland; Perfumery, Sundries, or Specials. "Guild" (158/1), Office of this Paper.

AS Stockkeeper, Buyer, or position of trust; 16 years in all departments, Drugs, Chemicals, Patent Medicines, Perfumery (English and Foreign), Sundries, etc.; interview. 158/17, Office of this Paper.

REPRESENTATIVE, having an established connection, desires to Represent another firm; Midlands; can give proof of business done; part expenses and commission. "Pharmacist" (160/7), Office of this Paper.

AS Traveller or Local Representative; Yorkshire, Lancashire, Midland and Northern Counties; Druggists' Sundries, Drugs, Perfumes, Soaps, or Specialities; connection and experience of travelling. 157/35, Office of this Paper.

ITALY.—Splendid opportunity; Italian Chemist as Representative, Traveller, to establish depôt; reliable, skilful in organising, creating sales; connection with Medical men in Italy; now in London. Write, "Signore" (158/29), Office of this Paper.

THE proprietors of a well-known Preparation are willing to allow their Representative to carry one other line of a non-competitive nature; small salary and share of expenses. Herbert Illingworth, 82 Arodene Road, Brixton Hill, S.W.

TRAVELLER, experienced, well introduced, sound connection, possessing swift decision, tact, a keen judgment, and a thorough Pharmaceutical and commercial training, requires appointment with first-class house. Apply, 158/39, Office of this Paper.

SOUTH American and Colonial Export Trade.—Gentleman (30), 9 years' all-round experience, Drug and Chemical Department, leading firm (5 years' control), desires position, good house; knowledge Spanish, Portuguese; energetic; good organiser. Address, "Pará" (157/18), Office of this Paper.

REPRESENTATIVE.—A gentleman possessing experience, ability, and a first-class connection among leading London Stores and Traders, Wholesale and Retail, is open to undertake the Representation of a well-established firm upon salary or commission and part expenses; highest references. "N. N." (159/21), Office of this Paper.

GENTLEMAN; 27; 12 years' experience, Continental and British; well up in all branches of Drug and Chemical trade, speaking fluently English, German, French; excellent knowledge of Spanish; competent correspondent, stenographer, typist, bookkeeper; able to push business as Traveller on Continent; highest references. 154/29, Office of this Paper.

MISCELLANEOUS.

MCADAM & TUCKNISS, Sharedealers, 30 Tranquil Vale, Blackheath, S.E. Telephone 81A Lee Green.

SHARES FOR SALE (free of commission, subject).—100 Allen & Hanburys "A" 6 per cent. Preference, 24*s.* 10½*d.*; 145 Ayrton, Saunders & Co. 5 per cent. Preference, 18*s.* 6*d.* c.d.; 83 Camwal Ordinary, 1*s.* 3*d.*; 100 Molassine Preference, 13*s.* 6*d.*; 100 Mellins 6 per cent. Preference, 19*s.* 9*d.*; 200 Idris "A" Ordinary 3*s.* 1½*d.*, 340 "A" 6 per cent. Preference 6*s.* 4½*d.*; 25 Pears Ordinary, 32*s.* 3*d.*; 100 Quinine Bitters, 10*s.*

WANTED (subject).—100 Coleman Wincarnis, 16*s.* 6*d.*; 50 Dentals (£4 10*s.* paid), £4 19*s.*

List of shares for sale and wanted sent free on application. Bankers, London and County. Established 1898.

SPECIAL OFFER IN SECOND-HAND FITTINGS, etc.—1 very handsome 6-ft. dispensing-screen, with bevelled mirror-centre, £5; 1 special set of 3 plate-glass shelves for window 5 ft. 10 in. long by 15, 12, and 9 in. wide, with shaped fronts, standard bars and brackets, 57*s.* 6*d.*; 140 shop bottles, assorted sizes, 75*s.*; 1 4-ft. mahogany dispensing-screen, 40*s.*; 1 6-ft. counter with panelled front, 25*s.*; 3 2-gal. very handsome cut-glass window show-bottles or carboys, 25*s.* each; 12 2-lb. blue ung. jars, gold labelled, 22*s.*; 1 3-ft. bent front counter-case, 40*s.*; 3 4-gal. swan-neck carboys with cut stoppers, 30*s.* each. Particulars from R. TOMLINSON & SONS, Bond Street, Constitution Hill, Birmingham.

COMPLETE FITTINGS FOR SHOP.—In excellent condition; as good as new; 12-ft. drug fitting, 6-ft. wall-case, 6-ft. screen and counter, 8-ft. serving-counter, perfume-case and desk; £30 the lot; a great bargain. PHILIP JOSEPHS & SONS, LTD., 93 Old Street, London, E.C.

WE HAVE WHAT YOU REQUIRE, Drug Fittings, Counters, Wall-cases, Dispensing-screens, Perfume-cases, etc., in almost all sizes; second-hand; condition first-class; prices reasonable. Write for sketches and details giving approximate sizes, or call and inspect. RUDDUCK & CO., 262 OLD STREET, E.C.



THE WORKER WINS.

My Booklet "The Door to Success" is for Chemists who are Workers. Though my system of Business Increasing is so arranged that the system itself gives you little or no trouble, it will cause you more work in this way: you will, say in 14 days, have more Customers to serve, more preparations will be sold and will require putting up, more money to count at night, and to spend on your holidays next year. Some 660 Chemists here and in the Colonies use my system. Have you, my reader, **any excuse to make to your family** for not making more money? Investigate, ask my references, but first ask for Free Booklet, &c.

BERNARD SLACK, Princes Chambers, WOLVERHAMPTON.

PLATE-GLASS Shelves, Window-fittings, Carboys, Counters, Drug-fittings, Dispensing-screens, Wall Cases; second-hand; send for list; cheapest house for high-class fittings; complete Chemist fitters; estimates and designs free; men sent to all parts. TREBLE & CO., Shop-front Builders, 3 Great Tower Street, London, E.C.

THE Proprietor of the Patent No. 19208 of 1906 for "Artificial Teeth and Methods of Manufacturing the same" is desirous of entering into arrangements by way of licence and otherwise on reasonable terms for the purpose of exploiting the same and ensuring its full development and practical working in this country. All communications should be addressed in the first instance to HASELTINE, LAKE & CO., Chartered Patent Agents and Consulting Engineers, 7 and 8 Southampton Buildings, Chancery Lane, London, W.C.

POISONS and Pharmacy Act, 1908. With Notes by H. Wippell Gadd, Barrister-at-law. A Practical Handbook for Business Men and Students. Price 1*s.* net. London: Baillière, Tindall & Cox, 8 Henrietta Street, Covent Garden.

ANOTHER RESULT OF A WINDOW DISPLAY.

A Pharmacist writes: "The window display in June was most successful, selling about 154 packets in a fortnight." That is what you want, viz., Window Displays that sell the goods and attract people's attention; advertising that brings results quickly, and good ideas for Specialities, &c. The outlay is small; no catchpenny ideas, or anything recommended to lower the prestige of a Pharmacist. Booklet "HOW TO INCREASE YOUR BUSINESS," telling you all about my business-pulling system, sent post free to Pharmacists on receipt of postcard.

J. R. B. ALLISON, Pharmacist & Business Specialist, RETFORD.

GUMMED PRICE TICKETS

1/3

Crimson ground, white figures. Stocked in all usual prices up to 21/-, each price banded separately in hundreds.

The Midget, 9d. per 1,000
The Magnum, 1/6 „
assorted 10 prices.

Full illustrated list of Blanks for use with these tickets free on application.

10D.

DUDLEY & CO., Ticket Writers & Printers, Holloway, London

We desire particularly to draw the attention of Colonial and Foreign Subscribers to the fact that in cases where they require partners, agents, or assistants, or wish to sell their businesses, an advertisement in this Supplement, placed in every copy of "The Chemist and Druggist," should be the readiest means of helping them to attain their object. The tariff for such announcements is given under the appropriate headings in the Supplement. Instructions and remittances can be sent to us direct or through the advertisers' correspondents in this country.

Exchange Column—Bargains.

FOR DISPOSAL.

APPARATUS.

BECKER, FILS & CIE.'s balances; nearly new; bargain. Offers, Watson, Chemist, Beccles.

PILL-MACHINE, marble slab, cut 24 5-grains, offers; also quantity of chemical apparatus. List sent on application, Robinson, Beech House, Whitkirk, near Leeds.

SECOND-HAND 100-gal. modern copper vacuum pan, complete with pump, etc.; also engine and boiler and special steam-still. Apply to Darton (134/71), Office of this Paper.

BOOKS AND PERIODICALS.

"ENCYCLOPÆDIA Britannica," in ¾ morocco binding; complete with bookstand; cost £41 8*s*.; quite new and unsoiled; £15. Crail, 34 Hanover Street, Liverpool.

FORMULÆ.

LIQUID brass-polish formula for sale. France, 42 Vartry Road, London, N.

NON-POISONOUS nit-pomade; unpublished, original; cheap; price 5*s*. Rowe, Arklow, Ireland.

GINGER-BEER powder, lemon-flavoured; suit export trade; no bad stock; costs under 12*s*. gross for 3*d*. packets. "Bruno," 141 St. James's Street, Burnley.

SHARES.

SHARES for Sale. See p. 82.

WHAT offers for following: 50 £1 Bleasdales, Ltd.; 50 £1 A. J. White, Ltd., ordinary. Robinson, Beech House, Whitkirk, near Leeds.

OPTICAL AND PHOTOGRAPHIC.

ONE each guinea Klito, Brownie's, half-price; Aldis Oxys ½-plate anastigmat, listed £5, take £2 10*s*. Rowe, Arklow, Ireland.

COMPLETE trial-case, quite new, cost £12 12*s*.; also Laurance's "General and Practical Optics," 10*s*. 6*d*.; will take £7 for lot. Apply, Mountford, 2 New Orchard Street, Bath.

OPTICAL outfit, including lenses, frames, gold and steel for spectacles and eye-glasses; testing-card and frame; screw-driver, etc.; lot cost nearly £7; accept £5. Reid, Castletown, Caithness.

SHOP FITTINGS.

FOR sale, 4 perfect pear-shaped carboys, capacity nearly 8 gal., height 36 in., cut stoppers; 3 specie-jars, height 32 in., handsome gilt crests, labels, and tops, one cracked but riveted and intact; all on painted wood stands. Kirkland, Chemist, Crickhowell.

MISCELLANEOUS.

O'BRIEN'S self-closing check-till, excellent working order, 30*s*.; dispensing-scales, on mahogany stand with drawer, 16*s*.; microscope, ¼-in. and ½-in. objectives, in mahogany box, good solid brass stand, 16*s*. 156/6, Office of this Paper.

WANTED.

VEEDEE vibrator, in good condition, for cash. Milne, Chemist, Trinity, Edinburgh.

"BRITISH Pharmaceutical Codex"; cheap and good. Offers, Forster, Chemist, Seaham Harbour.

BOTTLES, dispensing scales, and various sundries for a surgery. State price, Mowat, 137 Fawcett Road, Southsea.

MINOR, Major, Chemists' books.—Send prepaid for valuation; cash offers per return. Gower, Bookseller, Waterloo, Liverpool.

College Notes.

Where to Study.

The following educational institutions are advertising in this issue:

School of Pharmacy of the Pharmaceutical Society, 17 Bloomsbury Square, London, W.C.
Muter's (South London) School of Pharmacy, 325 Kennington Road, London, S.E.
London College of Pharmacy, 323 Clapham Road, London, S.W.
Bath and West of England College of Pharmacy, Cleveland Place, Bath.
Birmingham and Midland College of Pharmacy, 45 Newhall Street, Birmingham.
Edinburgh Central School of Pharmacy, 26 Clyde Street, Edinburgh.
Glasgow School of Pharmacy, 180 West Regent Street, Glasgow.
Leeds College of Pharmacy, Clarendon Road, Leeds.
Liverpool School of Pharmacy, 18 Colquitt Street, Liverpool.
Manchester College of Pharmacy, 225A-227A Oxford Road, Manchester.
North of England School of Pharmacy, 55 Northumberland Avenue, Newcastle-on-Tyne.
North Stafford School of Pharmacy, Kidsgrove, Stoke-on-Trent.
Northern College of Pharmacy, 100-102 Burlington Street, Manchester.
Nottingham School of Pharmacy, 13 Victoria Street, Nottingham.
Royal Dispensary and School of Pharmacy, 21 West Richmond Street, Edinburgh.
South of England School of Pharmacy, 186 Clapham Road, London, S.E.

Birmingham University School of Pharmacy, Birmingham.
Bristol University, Bristol.
Edinburgh University, Edinburgh.
Durham University College of Medicine, Newcastle-on-Tyne.
Liverpool University School of Pharmacy, Liverpool.
Manchester University School of Pharmacy, Manchester.
St. Andrews University, St. Andrews, N.B.

British Optical Institute, Mount Edgcumbe Gardens, Clapham Road, S.W.
Burlington Correspondence College, Birkbeck Bank Chambers, London, W.C.
Institute of Chemistry, 20 Bloomsbury Square, London, W.C.
City of London College, White Street, Moorfields, London, E.C.
Goldsmiths' Institute, New Cross, London, S.E.
South-Western Polytechnic, Manresa Road, Chelsea, S.W.
Leeds Technical Institute, Leeds.

Charing Cross Hospital Medical School, Chandos Street, London, W.C.
National Dental Hospital College, Great Portland Street, London, W.
Royal Dental Hospital School, Leicester Square, London, W.C.
Royal (Dick) Veterinary College, Edinburgh.

British Toilet-soap is little imported into South Russia, the demand being chiefly for French and the home-made articles. This is partly on account of their gay wrappers designed to recommend the articles to purchasers of small presents—a purpose for which they are often used in Russia. Perfumes are largely imported from Germany and France.

Caffeine-free Coffee.—At the statutory meeting of the Lifebelt Coffee Co. held at Imperial Buildings, Ludgate Circus, on August 6, Mr. Thomas Lough, M.P., referred to the very beneficial arrangement which the company had made with a large manufacturer of alkaloids, who had taken a large interest in the company, in consideration of their entering into an agreement under which they would do all the extraction of the caffeine.

Platinum in New South Wales.—The platinum won during 1908 amounted to 135 oz., valued at 439*l*., as compared with 276 oz., valued at 1,014*l*., in 1907, and is the smallest yield recorded. It was obtained from the alluvial deposits in the Fifield Division, with the exception of a few ounces contained in the concentrates secured by the treatment of the beach sands from the vicinity of Jerusalem Creek, South Woodburn Division.

Trade-marks Applied For.

Objections to the registration of any of the undermentioned applications should be lodged with Mr. Temple Franks, Comptroller-General of Patents, Designs, and Trade-marks, at the Patents Office, 25 Southampton Buildings, Chancery Lane, London, W.C., within one month of the dates mentioned. The objection must be stated on Trade-marks Form No. 7, cost £1, obtainable through any money-order office. The figures in parentheses refer to the classes applied for.

(From the "Trade-marks Journal," July 28, 1909.)

"Coalite"; for disinfectant soaps (2), medicated soaps (3). "Coalite," in a cross device; for goods in 1, 2, 3, 4, 47, and 50. By British Coalite Co., Ltd., 3 London Wall Buildings, London, E.C. 304,385/6, 306,374/81.

Circular device, with words "For Day or Gaslight Printing"; for chemicals (1) and photographic paper (39). By Synoloids, Ltd., 14 Harlesden Park Parade, London, N.W. 311,986/7.

"Sodax"; for chemicals (1). By Joseph Crosfield & Sons, Ltd., Bank Quay, Warrington. 313,531.

"Ludigol"; for all goods (1). By Badische Anilin & Soda Fabrik, Friesheimerstrasse, Ludwigshafen-on-Rhine. 313,604.

"Printex Self-toning Emulsion"; for a photographic chemical (1). By Lothar Fiedler, 6 Eversleigh Gardens, Loughton. 313,831.

"Mongoose Brand," and picture of mongoose; for manufacturing chemicals (1). By Hanger, Watson & Harris, Ltd., Stoneferry Works, Hull. 314,057.

"Septabs"; for a hairdresser's sterilising-tablet (2). By J. S. Hill, 1 Academy Street, Warrington. 313,805.

"Vermina"; for an insect-destroying powder (2). By F. E. Gillett, 39 Marsham Street, London, S.W. 314,154.

"Tanglite"; for chemicals (2). By Strawsons & Co., 79 Queen Victoria Street, London, E.C. 314,253.

"McKenzie's Cough-mixture and Lung-tonic," and label device, with replica of same in Chinese; for a medicine (3). By J. McKenzie, 12 Battery Road, Singapore, Straits Settlements. 310,290.

"Thioderm"; for medicinal chemicals (3). By Land & Co., 10 Market Place, Coalville. 313,073.

"Piso"; for medicinal chemicals (3). By Piso Co., Warren, Pennsylvania, U.S.A. 312,393.

"Lodal"; for medicinal chemicals (3). By Burroughs Wellcome & Co., London, E.C. 313,694.

"Solugen"; for a medicine (3). By T. A. Harrison, 534 High Road, Goodmayes, Ilford. 313,856.

"Bodim"; for all goods (3). By J. T. Bolsover, 29 High Street, Swallow Nest, Yorkshire. 314,126.

"Selsus"; for a skin-ointment (3). By Barclay, Hobson & Co., Ltd., 3 Moreton Street, Strangeways, Manchester. 314,237.

"Noxo"; for photographic paper (39). By J. J. Griffin & Sons, Ltd., Kingsway, London, W.C. 312,016.

"Ve-Ga"; for aërated waters (44). By D. & E. Rosser, Wind Street, Neath. 314,217.

"Finsbury" on double-funnel device; for oils (47). By Stern-Sonneborn Oil Co., Ltd., 16 Finsbury Square, London, E.C. 313,948.

"Pinax"; for all goods (48). By J. Singleton, 41 Corporation Street, Manchester. 312,571.

"Amami"; for perfumery, etc. (48). By Prichard & Constance, 64 Haymarket, London, S.W. 314,038.

"Brytto"; for all goods (48). By W. Butterworth & Co., Buckley Street, Milnrow. 314,224.

(From the "Trade-marks Journal," August 4, 1909.)

"Lion"; for photographic plates and films (1). Imperial Dry Plate Co., Ltd., Cricklewood, London, N.W. 314,215.

Picture of a sheep; for a foot-rot salve (2). By H. J. Dales, Green Lane, Halton, near Leeds. 312,103.

"Leathers' Improved Ozonator," and label device; for deodorising materials (2). By C. C. Leathers, 48 Harvey Road, Leytonstone, London, E. 312,766.

"Rat Snap," and label device; for vermin-destroyers (2). By Youell's Exterminating Co., Annandale, New Jersey, U.S.A. 313,008.

"Raticine"; for a rat-exterminator (2). By G. R. Stanton, 19 Clapton Square, London, N.E. 313,711.

"Germbolic"; for disinfectants (2). By J. Leon, 15-19 Artillery Lane, Bishopsgate, London, E. 313,999.

"Desalgin"; for chloroform preparations (3). By Professor Dr. Schleich'scher Mfg. Co., Ltd., Gneisenaustrasse, 109/110, Berlin. 310,908.

"Kofgon," and device of life-belt; for a medicated ointment (3). By Elizabeth Collins, 93 Ashen Grove, Wimbledon Park. 312,276.

"Walcurette"; for medicinal chemicals (3). By Walton & Curtis, 190 Broadhurst Gardens, West Hampstead. 312,995.

"Opsonogen"; for a serum (11). By E. Heilmann, Postfach 24, Guestrow, Mecklenburg. 313,272.

"Whitecross," and device of same; for herbs, ant-eggs, and lemonade-powder (42), and tooth, toilet, foot and glove powders (48). By Shirley Bros., Ltd., Rockingham Street, London, S.E. 310,704, 311,611.

"Orangenfeuer," and device of stand of oranges; for beverages and essences (42) and aërated waters (44). By Fritz Erle Mfg. Co., Ltd., Holbeinstrasse, 28 Coln-Nippes. 312,468/9, 312,554/5.

"Zonix"; for lozenges or tablets (42). By W. B. Cartwright, Ltd., Dewsbury Road, Leeds. 313,412.

"Sobriquet," and label device; for an aërated water (44). By E. Harper, Scarth Street, Stockton-on-Tees. 312,968.

"Shell"; for candles and night-lights (47). By A. E. Webb, 315 Strone Road, Manor Park. 313,406.

"Sky"; for all goods (47). By Lever Bros., Ltd., Port Sunlight, Cheshire. 314,095.

"Drilline"; for hair-preparations (48). By Majestic Toilet Preparations Co., 20 Great Winchester Street, London, E.C. 308,709.

"Irioos"; for perfumery, etc. (48). By F. Wimshurst, 16 Devonshire Road, Bexhill. 313,433.

"Parmone"; for perfumery, etc. (48). By Boots' Pure Drug Co., Ltd., 37 Station Street, Nottingham. 314,355.

"Ketka"; for perfumery, etc. (48). By Osborne, Garrett & Co., 51-54 Frith Street, Soho, London, W. 314,385.

"Complector"; for a toilet cream-remover (50). By F. Derry, 37 New Bond Street, London, W. 314,132.

Gazette.

Partnership Dissolved.

Rosten, W. M., and Ganner, J., surgeons, Acocks Green, Worcestershire, under the style of Rosten & Ganner.

The Bankruptcy Acts, 1883 and 1890.

Adjudication.

Carrick, John Joseph, Blackhill, Durham, medical herbalist.

Trust Deed.

William Falconer, chemist and druggist, 128 High Street, Lochee, has granted a trust-deed on behalf of his creditors in favour of Mr. Elmslie Tosh, chartered accountant, 11 Reform Street, Dundee.

New Books.

These notes do not necessarily exclude subsequent reviews of the works. Any of these books printed in Great Britain can be supplied, at the published price, to readers of this journal on application (with remittance) to the Publisher of "The Chemist and Druggist," 42 Cannon Street, London, E.C.

Jones, C. *County Court Guide.* A practical manual of the ordinary procedure in these tribunals, including practical information upon evidence, special defences, etc., with appendices of table of fees, solicitors' costs, precedents, and useful forms. 4th edit. 7½×4¾. Pp. 349. 3*s.* 6*d.* net. (Wilson, 54 Threadneedle Street, London, E.C.) [This book gives in a clear and simple form information as to the ordinary jurisdiction of county courts, the chief rules and nature of evidence, instructions for issuing and serving summonses and orders, and the requisites for pleading special defences. The alterations in practice caused by the County Courts Act, 1903, by which the ordinary jurisdiction of the Courts is raised from 50*l.* to 100*l.*, are embodied in the text.]

Stone, C. H. *Practical Testing of Gas and Gas-meters.* 8vo. 15*s.* net. (Chapman & Hall.)

Ville, M. G. *Artificial Manures: Their Chemical Selection and Scientific Application to Agriculture.* New edit. 9×6. Pp. 388. 10*s.* 6*d.* net. (Longmans.)

Whittles, J. Dencer. *"Kra-kra" or "Craw-craw": Its Assigned Etiological Factor.* (Buckler & Webb, Birmingham.) [A pamphlet dealing with the identification of "Kra-kra" or foreign itch, which Mr. Whittles imagines may be transmitted by milk or the *pulex irritans.* There are given fourteen photo-micrographs of blood affected by the nematode.]

Workshop Receipts for Manufacturers and Scientific Amateurs. Vol. 2. 7½×4¾. Pp. 550. 3*s.* net. (Spon.)

Printed for the Proprietors by Spottiswoode & Co. Ltd., New-street Square, and published by the Proprietors at 42 Cannon Street, in the City of London.—*August* 14, 1909.

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HEAD OFFICE: 42 Cannon Street, London, E.C. Telegraphic Address: "CHEMICUS LONDON." Telephone No. 852, Bank.
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THE BUYERS' GUIDE.

In this section, under appropriate headings, are given the names of firms advertising in this or other issues of the month. No charge is made to advertisers for the insertion of their names, but only those who have contracts current for advertising in this journal are mentioned. The headings refer generally to the classes of goods actually advertised, but this is not a detailed Guide such as appears in "The Chemists' and Druggists' Diary." Inquiries addressed to "The Chemist and Druggist," 42 Cannon Street, London, E.C., regarding articles not appearing in these pages will receive prompt attention.

ACETIC ACID
Boehm, Fredk., Ltd.
Crown Chemical Works, Ltd.

ADVERTISING IDEAS
Allison, J. R. B.
Degen, F. A.
Plastic Advertisement Co.
Slack, Bernard
Smith, W. H., & Son

AER.-WATER MACHINERY
Barnett & Foster
British Automatic Aerators, Ltd.
Roberts, Richard, & Sons
(*See also* SODA FOUNTAINS)

AER.-WATER MATERIALS
Brunner, Mond & Co.
Bush, W. J., & Co., Ltd.
Hay, William, Ltd.
Stevenson & Howell, Ltd.
Sthamer, Dr. Richard
(*See also* ESSENCES, SOL.)

AERATED WATERS
Camwal, Ltd.
Idris & Co., Ltd.
Jewsbury & Brown

AIR CUSHIONS
Hutchinson Co.

AGENCIES, COLONIAL, &C.
Faulding, F. H., & Co.
Holzmuller & Schmidt
Kemp, F., & Co., Ltd.
Lennon, Ltd.
Murdoch, John, & Co.
Peake, Allen & Co.
Sankyo & Co.
Smith, Stanistreet & Co.

ALKALOIDS
Boehringer, C. F., & Soehme
Boehringer, C. H., Sohn
Hoffmann-La Roche, Ltd.
Howards & Sons, Ltd.
Macfarlan, J. F., & Co.
Merck, E.
Morson, T., & Son
Smith, T. & H., Ltd.
Zimmermann, C., & Co.

AMMONIA AND ITS SALTS
Brown & Blackburn
Burt, Boulton & Haywood, Ltd.
Nichols Chemical Co., Ltd.
Scrubb & Co., Ltd.
White, A., & Sons

ANNATTO
Fullwood, R. J., & Bland

ANTIMONY AND ITS SALTS
May & Baker, Ltd.
White, A., & Sons

ANÆSTHETICS
Duncan, Flockhart & Co.
Macfarlan, J. F., & Co.
Smith, T. & H., Ltd.
Zimmermann, C., & Co.
(*See also* CHLOROFORM)

ANTI-RHEUMATIC RINGS
Burge, Warren & Ridgley, Ltd.

ARROWROOT
Evans, Gray & Hood
Harker, George, & Co., Ltd.

ARTIFICIAL LIMBS
Haywood, J. H.

BALLROOM FLOOR POLISH
Lofthouse & Saltmer
Woolleys, Ltd.

BATH GLOVES
Hovenden, R., & Sons, Ltd.
Schutze, F., & Co.
Solport Bros.

BATHING CAPS
Hutchinson Co.
Maw, S., Son & Sons
Schutze, F., & Co.

BINOCULARS
Darton, F., & Co.
Raphaels, Ltd.

BISMUTH SALTS
Alliance Drug & Chem. Co.
Howards & Sons, Ltd.
May & Baker, Ltd.
Morson, T., & Son
Reitmeyer & Co.
Tyrer, T., & Co., Ltd.
White, A., & Sons

BOOKS AND MAGAZINES
Churchill, J. & A.
Ilford "Photo Manual."
Lewis, H. K.
Macmillan & Co.
Martindale's "Extra Phar."
"Prescriber, The"
Pitman, Sir I., & Sons, Ltd.
Southall Bros. & Barclay, Ltd.
Squire's "Companion"

BOTANIC DRUGGISTS.
Newball & Mason
Potter & Clarke, Ltd.

BOTTLES
Barnett & Foster
Beatson & Co.
Boling, Brown & Co.
Breffit, E., & Co., Ltd.
Bush, H. W., & Co., Ltd.
Chemists' Co-operative Wholesale
Feeher, M. J.
Gaasch, J. B.

BOTTLES (*continued*)—
Isaacs, I., & Co.
Johnsen & Jorgensen, Ltd.
Kilner Bros., Ltd.
Lang, Jules, & Son
Maw, S., Son & Sons
May, Roberts & Co.
Poths, H., & Co.
Toogood, W., Ltd.
Youldon, E., Ltd.

BOXES
Ayrton, Saunders & Co., Ltd.
Breffit, E., & Co., Ltd.
Ford, Shapland & Co.
Harrison & Waide
May, Roberts & Co.
Robinson & Sons, Ltd.
Rogers & Co.
Stipendum Stopper Co.

BREAST RELIEVERS
Maw, S., Son & Sons

BROMINE AND BROMIDES
Howards & Sons, Ltd.
Merck, E.

BRUSHES
Bidwell, Bidwell & Co.
Fecher, M. J.
Hovenden, R., & Sons, Ltd.
Kent, G. B., & Sons, Ltd.
Maw, S., Son & Sons
May, Roberts & Co.
Nicholls, W. G., & Co.
Tilbury, W. R., & Co.

BUTTER COLOURING
Fullwood, R. J., & Bland
Oldfield, Pattinson & Co.

CACHETS
Christy, T., & Co.

CAMOMILES
Boehm, F., Ltd.
Salle, H., & Cie.

CAMPHOR
Alliance Drug & Chemical Co.
Chemists' Co-operative Wholesale
Howards & Sons, Ltd.
May & Baker, Ltd.

CAPPING MATERIALS
Erhardt, H., & Co., Ltd.
Viscose Co., Ltd.

CAPS FOR BOTTLES, &c.
Darter, Wilkinson & Co.
Fecher, M. J.
Viscose Co., Ltd. (self-fixing)

CAPSULES
Allen & Hanburys, Ltd.
Baiss Bros. & Stevenson, Ltd.
British Drug Houses, Ltd.
Davies, Sons & Co.
Denoual, J., & Co.
Duncan, Flockhart & Co.
Lloyd, T. Howard, & Co.
Mawson & Co.
Parke, Davis & Co.
Pill, Tablet, & Capsule Alliance
Tye, J., & Son
Wand Mfg. Co.
Wander, A.
Warrick Bros.
Woolley, J., Sons & Co.

CAPSULING MACHINE
Melin, C.

CARAGHEEN MOSS
Holzmuller & Schmidt

CARBOLIC ACID
Burt, Boulton & Haywood, Ltd.
Calvert, F. C., & Co.
Chemists' Co-operative Wholesale
Hoffmann-La Roche, Ltd.
Hollingshurst & Co.
(*See also* Disinfectants)

CARBOYS
Breffit, E., & Co., Ltd.

CARTONS
Ford, Shapland & Co.
Harrison & Waide

CASH TILLS
Gledhill, G. H., & Sons, Ltd.
National Cash Register Co., Ltd.
O'Brien, T.

CASTOR OIL
Boehm, F., Ltd.
Hull Oil Mfg. Co., Ltd.
Premier Oil Extract. Mills, Ltd.

CAUSTIC SODA
Brunner, Mond & Co., Ltd.

CEMENTS
Kay Bros., Ltd.

CHALK, PRECIPITATED
Levermore, A., & Co.
Mumford, G. S., & Sons
Nichols Chemical Co., Ltd.
Sturge, John & E.

CHAMOIS
Cresswell Bros. & Schmitz
Internatl. Sponge Importers
Kent, G. B., & Sons, Ltd.
Solport Bros.

CHEMICAL MFRS.
Bayer Co., Ltd.
Boehringer, C. F., & Soehne
Bramwell, E., & Son
British Drug Houses, Ltd.
Brunner, Mond & Co., Ltd.
Burroughs Wellcome & Co.
Harrington Bros., Ltd.
Hoffmann-La Roche, Ltd.
Howards & Sons, Ltd.
Macfarlan, J. F., & Co.
May & Baker, Ltd.
Morson, T., & Son
Reitmeyer & Co.
Schimmel & Co.
Smith, T. & H., Ltd.
Sthamer, Dr. Richard
Sturge, John & E.
Tyrer, T., & Co., Ltd.
Washington Chemical Co.
White, A., & Sons

CHEMISTS, MFG.
Allen, Stafford, & Sons, Ltd.
Ayrton, Saunders & Co.
Beetham, M., & Son
Bell, John, Hills & Lucas, Ltd.
Blackie, R.
Brady & Martin, Ltd.
British Drug Houses, Ltd.
Burroughs Wellcome & Co.
Bush, W. J., & Co., Ltd.
Davenport, J. T., Ltd.
Duncan, Flockhart & Co.
Evans Sons Lescher & Webb, Ltd.
Fletcher, Fletcher & Co.
Hay, William, Ltd.
Hewlett, C. J., & Son
Kutnow, S., & Co., Ltd.
Lloyd, T. Howard, & Co.
Lorimer & Co., Ltd.
Martindale, W.
Newball & Mason
Newbery, F., & Sons, Ltd.
Oldfield, Pattinson & Co.
Oppenheimer, Son & Co.
Owbridge, W. T., Ltd
Parke, Davis & Co.
Potter & Clarke
Randall & Son, Ltd.
Ransom, W., & Son
Reitmeyer & Co.
Sankyo & Co.
Southall Bros. & Barclay, Ltd.
Squire & Sons
Standard Tablet & Pill Co.
Stevenson & Howell, Ltd.
Thompson & Capper
Wand Mfg. Co.
Woolleys, Ltd.
(*See also* Wholesale)

CHEST PROTECTORS
Solport Bros.
Wood, Vincent

CHLORIDE OF LIME
Brunner, Mond & Co., Ltd.

CHLOROFORM
Duncan, Flockhart & Co.
Macfarlan, J. F., & Co.
May & Baker, Ltd.
Morson, T., & Son
Smith, T. & H., Ltd.

CIGARS AND CIGARETTES
Hovenden, R., & Sons, Ltd.
Singleton & Cole, Ltd

CITRIC ACID AND CITRATES
British Drug Houses, Ltd.
Howards & Sons, Ltd.
Morson, T., & Son
Sturge, John & E.

CLINICAL THERMOMETERS
Burge, Warren & Ridgley, Ltd.
Hicks, J. J.
Maw, S., Son & Sons
Newbery, F., & Sons, Ltd.
Perken, Son, & Co., Ltd.

CLOTH BALLS
O'Neil Zetts & Co.
Senier, A., & Co

COAL TAR SPECIALITIES
Wright, Layman & Umney, Ltd.

COCOA
Cadbury Bros., Ltd.
Frame Food Co.
Oppenheimer, Son & Co., Ltd.

COLOURS, BEVERAGE, &c.
Boake (A.), Roberts & Co., Ltd.
Stevenson & Howell, Ltd.
(*See also* Dairy Adjuncts)

COMBS
Hovenden, R., & Sons, Ltd.
Kent, G. B., & Sons, Ltd.
Maw, S., Son & Sons
May, Roberts & Co.
Newbery, F., & Sons, Ltd.
Sangers'

COD-LIVER OIL
Albrethson, A., & Co.
Allen & Hanburys, Ltd.
Alliance Drug & Chem. Co.
Baiss Bros. & Stevenson, Ltd.
British Drug Houses, Ltd.
Bush, H. W., & Co., Ltd.
Devold, Peder
Evans Sons Lescher & Webb, Ltd.
Goodall, Backhouse & Co.
Lloyd, T. Howard, & Co.
Oldfield, Pattinson & Co.
Southall Bros. & Barclay, Ltd.
Woolley, Jas., Sons & Co., Ltd.
Wright, Layman & Umney, Ltd.
Zimmermann, A. & M.
Zimmermann, C., & Co.

CORKS
Mitchell, N. W., & Sons, Ltd.

CORN CURE
Edwards, S

CORN FILE
Lindsey, T. C., & Co., Ltd.

COUNTER ADJUNCTS
Evans Sons Lescher & Webb, Ltd

COUNTER SPECIALITIES
Allen & Hanburys, Ltd.
British Drug Houses, Ltd.
Hewlett, C. J., & Son
Newbery, F., & Sons, Ltd.
Southall Bros. & Barclay, Ltd.
Woolleys, Ltd.

CREAM OF TARTAR
British Drug Houses, Ltd.

CREOSOTE
Baiss Bros. & Stevenson, Ltd.
Burt, Boulton & Haywood
Morson, T., & Son

CREPE BANDAGE
Gimber, W., & Son
Norwich Crêpe Co. (1856), Ltd.
Wood, Vincent

CYANIDES
May & Baker, Ltd.

DAIRY SPECIALITIES
Benger's Food, Ltd.
Fullwood, R. J., & Bland
Oldfield, Pattinson & Co.
Tomlinson & Hayward, Ltd.

DEMIJOHNS
Breffit, E., & Co., Ltd.

DENTAL INSTRUMENTS
Hntrick, James L., & Co., Ltd.

DENTAL MECHANICS
Chalk, George, & Co.
Fentiman, A. G.
Fentiman, A. J., & Co.
Halder, E. C.
Last & White.
Wardale & Co.

DENTIFRICES
Beecham, T.
Beiersdorf, P., & Co.
Bell, John, Hills & Lucas, Ltd.
Blackie, R.
Burroughs Wellcome & Co.
Calvert, F. C., & Co.
Christy, T., & Co.
Cook, E., & Co., Ltd.
Eucryl, Ltd.
Hall & Ruckel
Jewsbury & Brown
Lambert Pharmacal Co.
McKesson & Robbins
Maw, S., Son & Sons
Newbery, F., & Sons, Ltd.
Odol Chemical Works
Standard Tablet & Pill Co.
Woods, W., & Son
Woolley, J., Sons & Co., Ltd.

DIABETIC BREAD AND FOOD
Callard & Co.
Van Abbott, G., & Sons

DIGESTIVE PRODUCTS
Armour & Co., Ltd.
Benger's Food, Ltd.
Fairchild Bros. & Foster
Parke, Davis & Co.
Squire & Sons
Zimmermann, C., & Co.

DISINFECTANTS
Baiss Bros. & Stevenson, Ltd
Burt, Boulton & Haywood, Ltd
Calvert, F. C., & Co.
Condy & Mitchell, Ltd.
Cook, E., & Co., Ltd.
Dalmas, A. de St., & Co.
Edwards, W., & Son
Jeyes' Sanitary Compounds, Ltd.
Kay Bros., Ltd.
Lambert Pharmacal Co.
Roberts, Cornford & Co.
Sanitas Co., Ltd.
Tomlinson & Hayward, Ltd.
Willows, Francis B. & T.
Wright, Layman & Umney, Ltd.
Zimmermann, C., & Co.

DOSE REGULATORS
Reuter, R. J.

DRUGGISTS' SUNDRIES
Ayrton, Saunders & Co., Ltd.
Barclay & Sons, Ltd.
Berliner, Arthur
Burge, Warren & Ridgley
Bush, H. W., & Co., Ltd.
Chemists' Co-operative Wholesale
Christy, T., & Co.
Cook, Alfred, & Co.
Edwards, W., & Son
Evans Sons Lescher & Webb
Fecher, M. J.
Gutmann, A. E., & Co.
Hatrick, James L., & Co., Ltd.
Hay, J. B., & Co.
Hewlett, C. J., & Sons
Hovenden, R., & Sons, Ltd.
Johnsen & Jorgensen, Ltd.
Lennon, Ltd.
Maw, S., Son & Sons
May, Roberts & Co.
Murdoch, John, & Co.
Newbery, F., & Sons, Ltd.
Poths, H., & Co.
Quelch, H. C., & Co.
Reuter, R. J.
Sangers'
Schutze, F., & Co.
Solport Bros.
Southall Bros. & Barclay, Ltd.
Tidman & Son, Ltd.
Toogood, W., Ltd.
Viscose Co., Ltd.
Wilkinson & Simpson, Ltd.
Wood, Vincent
Woolley, J., Sons & Co.

DRUGS, CRUDE
Holzmuller & Schmidt
Horner & Sons
Potter & Clarke, Ltd.
Ransom, W., & Son
Salle, H., & Cie.

DYES
Judson, D., & Son
Whitaker & Co.

EAU DE COLOGNE
Breidenbach & Co.
Farina, J. M.
Farina, J. M. (No. 4)
Fickus, Courtenay & Co.
McCracken, J. & R.
Schutze, F., & Co.

EDUCATIONAL INSTITUTIONS
Bath and West of England College of Pharmacy
Birmingham and Midland College of Pharmacy
Birmingham Correspondence College
British Optical Institute
Charing Cross Hospital Medical College
City of London College
Edinburgh Central School of Pharmacy
Glasgow School of Pharmacy
Goldsmiths' Technical College
Institute of Chemistry
Leeds College of Pharmacy
Leeds Education Committee
Liverpool School of Pharmacy
London College of Pharmacy
Manchester College of Pharmacy
Muter's (So. Lond.) School of Pharmacy
National Dental Hospital College
North of England School of Pharmacy
North Stafford School of Pharmacy
Northern College of Pharmacy
Nottingham School of Pharm.
Pharmaceutical Society's School of Pharmacy.
Royal Dental Hospital School
Royal (Dick) Veterinary College
Royal Dispensary (Edinburgh)
St. Andrew's University
South of England College of Pharmacy
South-Western Polytechnic
University of Birmingham
University of Bristol
University of Durham
University of Edinburgh.
University of Liverpool
University of Manchester
Westminster College of Pharm.

EFFERVESCENT PREPS.
Allen & Hanburys, Ltd.
Bishop, Alfred, Ltd.
Blackie, R.
Bristol-Myers Co.
Cox, A. H., & Co., Ltd.
Evans Sons Lescher & Webb, Ltd.

EFFERVESCENT PREPS. *(continued)*—
Goodall, Backhouse & Co.
Kntnow, S., & Co., Ltd.
Lloyd, T. Howard, & Co.
Lorimer & Co., Ltd.
Newball & Mason
Potter & Clarke
Standard Tablet & Pill Co.
Stnrge, John & E.
Tidman & Son, Ltd.
Tyrer, T., & Co., Ltd.
Wright, Layman & Umney

ELASTIC HOSIERY
Ayrton, Saunders & Co., Ltd.
Berliner, Arthur
Burge, Warren & Ridgley, Ltd.
Haywood, J. H.
Maw, S., Son & Sons
Wood, Vincent

EMERY AND CLOTH
Oakey, J., & Sons, Ltd.

EMULSIONS, COD-LIVER OIL, ETC.
Allen & Hanhnrys, Ltd.
Ayrton, Sannders & Co.
Baiss Bros. & Stevenson, Ltd.
Blackie, Rohert
British Drug Honses, Ltd.
Evans Sons Lescher & Webb,Ltd.
Fanlding, F. H., & Co.
Harker, Stagg & Morgan, Ltd.
Lorimer & Co., Ltd.
Oldfield, Pattinson & Co.
Scott & Bowne, Ltd.
Parke, Davis & Co.
Woolley, Jas., Sons & Co.
Woolleys, Ltd.

ENEMAS
Bailey, W. H., & Son
Bnrge, Warren & Ridgley
Davol Rnbber Co.
Hatrick, James L., & Co., Ltd.
Hay, J. B., & Co.
Ingram, J. G., & Son
Maw, S., Son & Sons
Toogood, W., Ltd.
Warne, W., & Co., Ltd.

ENTOMOLOGICAL APPARATUS
Watkins & Doncaster

EPSOM SALTS
Howards & Sons, Ltd.

ESSENCES, CONCRETE
Cresp-Martinenq
Lautier Fils
Murray, O., & Co., Ltd.
Ronre-Bertrand fils
Schmoller & Bompard

ESSENCES, SOL. AND FRUIT
Alliance Drng & Chem. Co.
Baiss Bros. & Stevenson, Ltd.
Barnett & Foster
Boake (A.), Roberts & Co., Ltd.
Bush, W. J., & Co., Ltd.
Evans Sons Lescher & Webb
Hay, Wm., Ltd.
Lantier Fils
London Essence Co.
Lorimer & Co., Ltd.
Newball & Mason
Ronre-Bertrand fils
Spencer, J., Son & Co.
Stevenson & Howell, Ltd.
Zimmermann, A. & M.

ETHERS
Baiss Bros. & Stevenson, Ltd.
Maofarlan, J. F., & Co.
May & Baker, Ltd.
Tyrer, T., & Co., Ltd.
White, A., & Sons

EUCALYPTUS OIL
British Drug Houses, Ltd.
Baiss Bros. & Stevenson, Ltd.

EXTRACT OF HERBS
Newhall & Mason
Potter & Clarke

EXTRACTS (MEDICINAL)
Allen, Stafford, & Sons, Ltd.
Chemists' Co-operative Wholesale
Hewlett, C. J., & Son
Parke, Davis & Co.
Ransom, W., & Son
(*See also* WHOLESALE DRUGGISTS)

FEEDING BOTTLES
Breffit, E., & Co., Ltd.
Feoher, M. J.
Hovenden, R., & Sons, Ltd.
Kilner Bros., Ltd.
Maw, S., Son & Sons
Sangers'
Sonthall Bros. & Barclay, Ltd.

FILTERS (WATER)
Berkefeld Filter Co., Ltd.

FLESH GLOVES
Sangers'

FLYCATCHERS
Alabastine Co. (British), Ltd.
Deansmere Manfg. Co.
Flykatcho
Ford, Shapland & Co.
Frowein, C.
Kay Bros., Ltd.
Smith, J. H., & Co.
Strong, Christy
Tunbridge & Wright

FOODS, INFANTS'
Allen & Hanburys, Ltd.
Benger's Food, Ltd.
Frame Food Co , Ltd.
Lofthouse & Saltmer
Natural Food Co., Ltd.
Willows, Francis, B & T.

FORMALDEHYDE
Burt, Bonlton & Haywood

FOODS, SPECIAL
Allen & Hanburys, Ltd.
Benger's Food, Ltd.
Brand & Co., Ltd.
Burt, C. J.
Buvo, Ltd.
Callard & Co.
Fairchild Bros. & Foster
Frame Food Co., Ltd.
Garman Bros.
Menley & James, Ltd.
Natural Food Co., Ltd.
Wander, A.

FRUIT CRYSTALS
Aerators, Ltd.

FRUIT SYRUPS
Idris & Co., Ltd.

FULLER'S EARTH
Mumford, G. S., & Sons

FUMIGATORS
Sanitas Co., Ltd.

GELATIN AND GLUE
Boehm, F., Ltd.

GLAUBER'S SALT
Bramwell, E., & Son
Howards & Sons, Ltd.

GLYCERIN
Boehm, F., Ltd.
Price's Patent Candle Co.

GLYCEROPHOSPHATES
Pointet & Girard

GOLD PAINT
Judson, D., & Son

GRINDERS
Allen, Stafford, & Sons, Ltd.
Goodall, Backhouse & Co.
Willows, Francis B. & T.

HAIR WAVERS AND CURLERS
Merkham Trading Co., Ltd.

HAIR PREPARATIONS
Capsuloids (1909), Ltd.
Chesebrough Manfg. Co.
Edwards' "Harlene" Co.
Harker, Stagg & Morgan
Herpicide Co.
John Strange Winter
Martiné & Co.
Robare's Aureoline
Rowland, A., & Sons
Woolleys, Ltd.

HAT DYES
Whitaker & Co.

HAT RENOVATORS
Christy, T., & Co.

HEATING FLASKS
Gutmann, A. E., & Co.

HERBS
Potter & Clarke

HOMŒOPATHIC MEDICINES
Ashton & Parsons, Ltd.
Keene & Ashwell, Ltd.
Leath & Ross

HOTELS
Esmond Hotel
Kingsley Hotel
Thackeray Hotel

HOT-WATER BOTTLES
Berliner, Arthur
Burge, Warren & Ridgley
Hutchinson Co.
Maw, S., Son & Sons
May, Roberts & Co.
Southall Bros. & Barclay
Wood, Vincent

HYDROGEN PEROXIDE
May & Baker, Ltd.
Sanitas Co., Ltd.
Tyrer, T., & Co., Ltd.

HYPOPHOSPHITES
May & Baker. Ltd.
Tyrer, T., & Co., Ltd.

INHALERS
Christy, T., & Co.
Fecher, M. J.
Sangers'

INK
Bewley & Draper, Ltd.
Hickisson, A. B.

INSECTICIDES
Christy, Thos., & Co.
Corry & Co., Ltd.
Smith, B. A., & Co.
Tomlinson & Hayward, Ltd.
Voss, Walter, & Co.
White, E. A., Ltd.
Woolleys, Ltd.

INSECT POWDER
Boehm, F., Ltd.
Smith, B. A., & Co.

IODINE AND IODIDES
Howards & Sons, Ltd.
Morson, T., & Son

ITROSYL
Fletcher, Fletcher & Co.

JARS AND POTS
Boling, Brown & Co.
Breffit, E., & Co., Ltd.
Bush, H. W., & Co., Ltd.
Cook, A., & Co.
Johnsen & Jorgensen, Ltd.
Kilner Bros., Ltd.
Lang, Jules, & Son
Maw, S., Son & Sons
Poths, H., & Co.
Reuter, R. J.
Stipendum Stopper Co.
Toogood, W., Ltd.

LACTIC FERMENTS
Allen & Hanburys, Ltd.
Cox, Arthur H., & Co., Ltd.
Davies, Sons, & Co.
Martindale, W.
Parke, Davis & Co.
Wilcox, Jozeau & Co.

LAMPS, DISINFECTING
Roberts, Cornford & Co.

LANOLINE
Burroughs Wellcome & Co.
Christy, T., & Co.
Sangers'

LARD
Chemists' Co-operative Wholesale
Ewen, J., & Sons

LIME JUICE AND CORDIAL
Evans Sons Lescher & Webb
Goodall, Backhouse & Co.
Idris & Co., Ltd.

LINSEED, CRUSHED, ETC.
Allen, Stafford, & Sons
Mumford, G. S., & Sons

LINTS
Vernon & Co., Ltd.

LIQUORICE JUICE
Boehm, F., Ltd.
British Drug Houses, Ltd.
Evans, Gray & Hood
Evans Sons Lescher & Webb,Ltd
Horner & Sons
Jackson, E. E.
Mumford, G. S., & Sons

LIQUORS, CONC., ETC.
Allen, Stafford, & Sons, Ltd.
Fletcher, Fletcher & Co.
Hewlett, C. J., & Son
Rohinson, B., & Co.

LITHIA SALTS
British Drug Houses, Ltd.
May & Baker, Ltd.
Merck, E.

LOOFAHS
Cresswell Bros. & Schmitz

LOZENGES
Allen & Hanbnrys, Ltd.
Cox, A. H., & Co., Ltd.
Denoual, J., & Co.
Jackson, E. E.
Meggeson & Co., Ltd.
Potter & Clarke
Raimes & Co
Warrick Bros.

MACHINERY, PHARMACAL
Allen & Hanburys, Ltd.
Bennett, E., & Son, Ltd.
Bennett, Sons & Shears, Ltd.
Fecher, M. J.
Gardner, Wm., & Sons, Ltd.
Pindar, J. W., & Co.
Smith, B. A., & Co.
Stokes, F. J., Machine Co.
Thompson & Capper (Stokes)
Wilkinson, S. W., & Co.

MAGNESIA AND ITS SALTS
Henry, T. & W.
Howards & Sons, Ltd.
May & Baker, Ltd.
Washington Chemical Co.

MAILING CASES
May, Roberts & Co.

MALT EXTRACT AND PREPS.
Allen & Hanhurys, Ltd.
Baiss Bros. & Stevenson, Ltd.
Blackie, R.
British DiaMalt Co.
Burroughs Wellcome & Co.
Evans Sons Lescher & Webb
Hewlett, C. J., & Son
Lorimer & Co., Ltd.
Oppenheimer, Son & Co., Ltd.
Paine & Co., Ltd.
Southall Bros. & Barclay, Ltd.
Squire & Sons
Woolley, Jas., Sons & Co., Ltd.
Wright, Layman & Umney

MARKING INK
Hickisson, A. (Bond's)

MEASURES
Bush, H. W., & Co. ,Ltd.

MEAT EXTRACTS
Armour & Co., Ltd.
Brand & Co., Ltd.
Buvo, Ltd.

MEDICINE CHESTS
Burroughs Wellcome & Co.
Keene & Ashwell, Ltd.
Leath & Ross
Lloyd, T. Howard, & Co.
Parke, Davis & Co.

MENTHOL CONES
Bush, H. W., & Co., Ltd.
Maw, S., Son & Sons

MERCURIALS
Howards & Sons, Ltd.
May & Baker, Ltd.
Merck, E.
Tyrer, T., & Co., Ltd.

METEOROLOGICAL SETS
Darton, F., & Co.

METHYLATED SPIRIT
Burrough, J., Ltd.
Preston's Liverpool Distillery
Randall & Son, Ltd.

MILK APPARATUS
Zimmermann, C., & Co.

MILK BYPRODUCTS
Casein, Ltd.

MINERAL WATERS AND SALTS
Apollinaris Co., Ltd.
British Drug Houses, Ltd.
Hughes, E. Griffiths
Ingram & Royle, Ltd.
Vichy (State Springs)

MOTOR GOGGLES
Darton, F., & Co.

MUSK, ARTIFICIAL
Mallmann, W.

NAPHTHAS
Burt, Boulton & Haywood

NURSES' WALLETS
Hatrick, James L., & Co., Ltd.

OILS, ESSENTIAL
Allen, Stafford, & Sons, Ltd.
Alliance Drug & Chem. Co.
Baiss Bros. & Stevenson
Boake (A.), Roberts & Co., Ltd.
Bush, W. J., & Co., Ltd.
Chiris, Antoine
Cresp-Martineaq
Evans Sons Lescher & Webb,Ltd.
Holzmuller & Schmidt
Horner & Sons
Lautier Fils
Lhermine & Cie.
London Essence Co.
Matthew, Jesse
Mühlethaler, Th., Ltd.
Pasquale, S. F. de, & Fratelli
Poppelreuter, W.
Ransom, W., & Son
Roure-Bertrand fils
Sachsse, E., & Co.
Scheller, Emil, & Co.
Schimmel & Co.
Schmoller & Bompard
Spencer, J., Son & Co.
Stevenson & Howell, Ltd.
Todd, A. M., Co.
Wright, Layman & Umney
Zimmermann, A. & M.

OILS, FATTY, ETC.
Allen, Stafford, & Sons, Ltd.
Price's Patent Candle Co.
Smith, B. A., & Co.

OILS, MINERAL
Price's Patent Candle Co.
Wright, Layman & Umney

OINTMENTS
Blackie, R.
Chemists' Co-operative Wholesale
Oldfield, Pattinson & Co.

OPTICAL GOODS
Botwright & Grey
Darton, F., & Co.
Maw, S., Son & Sons
Newbery, F., & Sons, Ltd.
Nitsche & Günther
Raphael's, Ltd.
Richardson, S. (Hardy & Co.)

OPTICAL INSTRUCTION
British Optical Institute

OTTO OF ROSE
Bontcheff & Kidoff
Pappazoglou, D.
Reitmeyer & Co. (synthetic)
Scheller, Emil & Co.
Seraphimoff, S., & Co.
Shipkoff & Co.

PACKED GOODS
(*See* Wholesale)

PALATINOIDS
Oppenheimer, Son & Co

PASTILLES
Allen & Hanburys, Ltd.
Asche, C. F., & Co.
Baiss Bros. & Stevenson
Burroughs Wellcome & Co.
Denoual, J., & Co.
Evans Sons Lescher & Webb
Meggeson & Co., Ltd.
Warrick Bros.

PATENT AGENT
Barker, R. W.

PERFUMES
Allen & Hanburys, Ltd.
Barclay & Sons, Ltd.
Breidenbach & Co.
Bronnley, H., & Co., Ltd.
Bush, W. J., & Co., Ltd.
Christy, T., & Co.
Chuit, Naef & Co.
Erasmic Co., Ltd.
Evans Sons Lescher & Webb, Ltd.
Hewlett, C. J., & Son
Hovenden, R., & Sons, Ltd.
John Strange Winter.
Lescol Perfumery Co.
McCracken, J. & R.
Maw, S., Son & Sons
Newbery, F., & Sons, Ltd.
Quelch, H. C., & Co.
Scheller Emil & Co.
Southall Bros. & Barclay
Spencer, J., Son & Co.
To-Kalon Mfg. Co.
Warrick Bros.
West, T.
Yardley & Co., Ltd

PERFUME MATERIALS
Bush, W. J., & Co., Ltd.
Chiris, Antoine
Compagnie Morana
Cresp-Martinenq
Flora Chemical Works, Ltd.
Lautier Fils
Mallmann, W.
Mühlethaler, Th., Ltd.
Murray, O., & Co., Ltd.
Schimmel & Co.
Shipkoff & Co.
Spencer, J., Son & Co.
Zimmermann, C., & Co.

PESSARIES
Burge, Warren & Ridgley
Rendell, W. J.

PETROLEUM EMULSION
British Drug Houses, Ltd.

PETROLEUM JELLY
Chesebrough Mfg. Co.

PHOTO. CHEMICALS
Boehringer, C. F., & Soehne
Burroughs Wellcome & Co.
Lockyer, J. E.
Merck, E.

PHOTO. ENLARGERS, PRINTERS, &c.
Express Developing Co.
Halifax Photographic Co.

PHOTO. GOODS
Barclay & Sons, Ltd.
Darton, F., & Co.
Evans Sons Lescher & Webb
Halifax Photographic Co.
Ilford, Ltd.
Lennon, Ltd.
May, Roberts & Co.
Murdoch, John, & Co.
Newbery, F., & Sons, Ltd.

PILL MAKERS
Allen & Hanburys, Ltd.
Asche, C. F., & Co.
Bishop, Alfred, Ltd.
British Drug Houses, Ltd.
Cox, A. H., & Co., Ltd.

PILL MAKERS *(continued)*—
Davies, Sons & Co.
Evans Sons Lescher & Webb, Ltd.
Hewlett, C. J., & Son
Howards & Sons, Ltd.
Lloyd, T. Howard, & Co.
McKesson & Robbins
Parke, Davis & Co.
Pill, Tablet, & Capsule Alliance
Southall Bros. & Barclay
Standard Tablet & Pill Co.
Wand Mfg. Co.
Warner, W. R., & Co.
Woolley, J., Sons & Co., Ltd.

PLASTERS
Allcock Mnfg. Co.
Berliner, Arthur
Beiersdorf, P., & Co.
Dalmas, A. de St., & Co.
Leslies, Ltd.
Maw, S., Son & Sons
Solport Bros

PLASTIC MODELS
Plastic Advertisement Co.

POLISHES (VARIOUS)
Bradley & Bourdas
Judson, Daniel, & Son
Oakey, J., & Son, Ltd.

POSTERS
Ford, Shapland & Co.

PRINTERS
Dudley & Co.
Ford, Shapland & Co.
Harrison & Waide
Smith, W. H., & Son
Townsend, J., & Sons

PROPRIETARY ARTICLES
American Drug Stores
Anglo-American Drug Co.
Ashton & Parsons, Ltd.
Atkinson & Barker
Barclay & Sons, Ltd.
Battle, Son & Maltby
Beecham, T.
Beiersdorf, P., & Co.
Box, W. H.
British Drug Houses, Ltd.
Capsuloids (1909), Ltd.
Christy, T., & Co.
Coleman & Co., Ltd.
Congreve, G. T.
Cox, A. H., & Co., Ltd.
Curry, Henry
Daggett & Ramsdell
Daisy, Ltd.
Davenport, J. T., Ltd.
Day & Sons (Crewe), Ltd.
Day, Son & Hewitt
Denoual, J., & Co.
Edwards, W., & Son
Elliman, Sons & Co.
Evans Sons Lescher & Webb
Faulding, F. H., & Co.
Fellows' Syrup
Fennings, Alfred
Ferris & Co.
Fulford, C. E., Ltd.
Goodall, Backhouse & Co.
Grapelax, Ltd.
Gny's Tonic Co.
Henry, T. & W.
Himrods Asthma Cure
Hovenden, R., & Sons, Ltd.
Hughes, E. Griffiths
Ichthyol Co.
International Chemical Co.
Iron-Ox Rem. Co., Ltd.
Kay Bros., Ltd.
Kutnow, S., & Co., Ltd.
Lalor's, Dr., Phosphodyne
Lambert Pharmacal Co.
Lofthouse & Saltmer
Lorimer & Co., Ltd.
May, Roberts & Co.
Menley & James, Ltd.
Newbery, F., & Sons, Ltd.
Odol Chemical Works
Owbridge, W. T., Ltd.
Pedezy Co.
Powell, Thomas, Ltd.
Resinol Chemical Co.
Richards, J. M., & Sons
Ruhwel Co.
Sangers'
Savaresse's Capsules (Evans)
Schimmel & Co.
Scott & Bowne, Ltd.
Squire & Sons
Standard Tablet & Pill Co.
Stedman's Teething Powders
Thermogene Co., Ltd.
Thompson & Capper
To-Kalon Mfg. Co.
Tunbridge & Wright
Wilcox, Jozeau & Co.
Zotos, Ltd.
(*See also* Dentifrices and Toilet Articles)

PULVELLÆ
Warrick Bros.

PULVERETTES
Oppenheimer, Son & Co., Ltd.

PUMPS
Berkefeld Filter Co., Ltd.

QUININE AND SALTS
Boehringer, C. F., & Soehne
Howards & Sons, Ltd.
Pointet & Girard.

RAPE OILS
Hull Oil Mnfg. Co.

RAZORS
Auto-Strop Safety Razor Co.
Gillette Safety Razor, Ltd.
Hovenden, R., & Sons, Ltd.

RENNET
Fullwood, R. J., & Bland
Oldfield, Pattinson & Co.

RESINS AND RESINOIDS
Allen, S., & Sons, Ltd.
Allen & Hanburys, Ltd.
Morson, T., & Son
Ransom, W., & Son
Smith, T. & H., Ltd.

RESPIRATORS
Zimmer & Co

RUBBER GOODS
Davol Rubber Co
Burge, Warren & Ridgley, Ltd.
Evans Sons Lescher & Webb, Ltd.
Fecher, M. J.
Galen Mfg. Co.
Hatrick, James L., & Co., Ltd.
Haywood, J. H.
Hovenden, R., & Sons, Ltd.
Hutchinson Co.
Maw, S., Son & Sons
May, Roberts & Co
Wanklyn, H. A.
Warne, W., & Co., Ltd.

SACCHARIN
Saccharin Corporation, Ltd.

SALICIN
Macfarlan, J. F., & Co.
Smith, T. & H., Ltd.

SALICYLATES
Bayer Co., Ltd.

SAMPLE CASES
Keane, Thomas

SANTONIN
Smith, B. A., & Co.

SAPONIN
Field, C. W.
Sthamer, Dr. R.

SAUCES
Goodall, Backhouse & Co.

SCALE PREPARATIONS
Morson, T., & Son

SEA SALT
Tidman & Son, Ltd.

SEA-SICKNESS REMEDY
Zotos, Ltd.

SELTZOGENES
Aerators, Ltd.

SERUMS AND ANTITOXINS
Allen & Hanburys, Ltd.
Evans Sons Lescher & Webb
Parke, Davis & Co.
Schimmel & Co.
Wilcox, Jozeau & Co.

SHARES
McAdam & Tuckniss

SHEEP-DIPS
Burt, Boulton & Haywood
Sanitas Co., Ltd.
Tomlinson & Hayward, Ltd.

SHOP-FITTING
Ayrton-Graham, Ltd.
Bowling & Son
Evans Sons Lescher & Webb, Ltd.
Josephs, P., & Son
Maw, S., Son & Sons
Mills, H.
Parnall & Sons, Ltd.
Rudduck & Co.
Sangers'
Southall Bros. & Barclay, Ltd.

SOAP MATERIALS
Chiris, Antoine
Flora Chemical Works, Ltd.

SOAPS
Allen & Hanburys, Ltd.
Armour & Co., Ltd.
Breidenbach & Co.
Bronnley, H., & Co., Ltd.
Chesebrough Mfg. Co.
Cook, E., & Co., Ltd.
Erasmic Co., Ltd.
Hull Oil Mfg. Co., Ltd.
Lescol Perfumery Co.
Oakey, J., & Son, Ltd.
Pears, A. & F., Ltd.
Price's Patent Candle Co.
Richards, J. M., & Sons
Shaw, Henry & Co.
Wright, Layman & Umney
Yardley & Co., Ltd.

SOAPS, MEDICATED
Armour & Co., Ltd.
Bronnley, H., & Co., Ltd.
Calvert, F. C., & Co.
Faulding, F. H., & Co.
Lamhert Pharmacal Co.
Wright, Layman & Umney

SODA FOUNTAINS
British Automatic Aerators, Ltd

SODIUM BICARBONATE
Brunner, Mond & Co., Ltd.
Howards & Sons, Ltd.
Mumford, G. S.

SOYA OIL
Hull Oil Mnfg. Co.

SPARKLETS
Aerators, Ltd.

SPECTACLES
Botwright & Grey
Darton, F., & Co.
Maw, S., Son & Sons
Nitsche & Günther
Raphael's, Ltd.

SPHYGMOMETERS
Hicks, J. J.

SPIRIT OF WINE
Burrough, J., Ltd.
Preston's Liverpool Distillery

SPITTING-FLASKS
Maw, S., Son & Sons

SPONGE BAGS
Maw, S., Son & Sons
Schutze, F., & Co.
Toogood, W., Ltd.

SPONGE STANDS
Wanklyn, H. A.

SPONGES
Cresswell Bros. & Schmits
Interntl. Sponge Importers
Kent, G. B., & Sons, Ltd.
Maw, S., Son & Sons
Sangers'

SPONGES, RUBBER
Wanklyn, H. A.

SPONGIO-PILINE
Whitehead, R. R., & Bros.

SPRAYERS
Corry & Co., Ltd.
White, E. A., Ltd.

SPRAYS
Burge, Warren & Ridgley, Ltd
Cook, Alfred, & Co.
Davol Ruhher Co.
Hovenden, R., & Sons, Ltd.
Maw, S., Son & Sons
May, Roberts & Co.
Newbery, F., & Sons, Ltd.
Parke, Davis & Co.

STARCH
Mumford, G. S., & Sons

STILLS, ESSENTIAL OIL
Bennett, Sons, & Shears, Ltd.

STOPPERS
Fletcher, Fletcher & Co.
Stipendum Stopper Co.

STOVES (HEATING)
Clark, S., & Co.

SUPPOSITORIES
Cox, Arthur H., & Co.

SURGICAL APPLIANCES
Allen & Hanburys, Ltd.
Bailey, W. H., & Son
Burroughs Wellcome & Co
Hatrick, James L., & Co., Ltd
Maw, S., Son & Sons
Quelch, H. C., & Co.
Wood, Vincent
Warne, W., & Co., Ltd.

SURGICAL DRESSINGS
Beiersdorf, P., & Co.
Berliner, Arthur
Burroughs Wellcome & Co.
Dalmas, A. de St., & Co.
Galen Mfg. Co., Ltd.
Gimber, W., & Son
Hatrick, James L., & Co., Ltd
Haynes, G., & Co.
Leslies, Ltd.
Liverpool Lint Co
Macfarlan, J. F., & Co.
Maw, S., Son & Sons
Newsome, C.
Rohinson & Sons, Ltd
Southall Bros. & Barclay
Stuart Plaster Pad Co.
Vernon & Co., Ltd.
Wood, Vincent
Woolley, J., Sons & Co., Ltd.
Wright, Turner & Son, Ltd.

SWIMMING FLOATS
Schutze, F., & Co.

SYNTHETIC REMEDIES
Bayer Co., Ltd.
Boehringer, C. F., & Soehne
Boehringer, C. H., Sohn
Hoffmann-La Roche, Ltd.
Reitmeyer & Co.

SYNTHETIC PERFUMES
Boehringer, C. F., & Soehne
Bush, W. J., & Co., Ltd.
Chuit, Naef & Co.
Compagnie Morana
Flora Chemical Works, Ltd.
Murray, O., & Co., Ltd.
Reitmeyer & Co.

SYPHONS, S. W.
Aerators, Ltd.
Barnett & Foster
Breffit, E., & Co. Ltd.
Camwal, Ltd.
Idris & Co., Ltd.

SYRUPS, MEDICINAL
Chemists' Co-operative Wholesale
Fellows' Med. Mfg. Co.
Fletcher, Fletcher & Co.
Squire & Sons

TABLETS, COMPRESSED
Allen & Hanburys, Ltd.
Asche, C. F., & Co.
Bishop, Alfred, Ltd.
British Drug Houses, Ltd.
Cox, A. H., & Co., Ltd.
Davies, Sons & Co.
Duncan, Flockhart & Co.
Evans Sons Lescher & Webb
Howards & Sons, Ltd.
Jackson, E. E.
Lloyd, T. Howard, & Co.
McKesson & Robbins
Parke, Davis & Co.
Pill, Tablet, & Capsule Alliance
Potter & Clarke
Standard Tablet & Pill Co.
Thompson & Capper
Wand Manufacturing Co.
Warner, W. R. (Newbery)

TABLOID PRODUCTS
Burroughs Wellcome & Co.

TARTARIC ACID
British Drug Houses, Ltd.
Boehringer, C H., Sohn

TELEPHONE CAPS
Jeves' Sanitary Compounds Co., Ltd.

TELESCOPES
Darton, F., & Co.

TIN BOX MAKERS
Goodall, Backhouse & Co.
Huntley, Boorne & Stevens

TINFOILS
Erhardt, H. & Co., Ltd.

TOBACCO
Singleton & Cole, Ltd.

TOFFEE
Meggeson & Co., Ltd.

TOILET PAPER
Ford, Shaplands & Co.
Newbery, F., & Sons, Ltd.
Townsend, J., & Sons

TOILET ARTICLES
Allen & Hanburys, Ltd.
Armour & Co., Ltd.
Auto-Strop Safety Razor Co.
Beetham, M., & Son
Berliner, Arthur
Blackie, R.
Breidenbach & Co.
Bronnley, H., & Co., Ltd.
Burroughs Wellcome & Co.
Chesebrough Mfg. Co.
Christy, T., & Co.
Cook, E., & Co., Ltd.
Daggett & Ramsdell
Daisy, Ltd.
Edwards' Harlene Co.
Erasmic Co., Ltd.
Eucryl, Ltd.
Hall & Ruckel
Harker, Stagg & Morgan
Hovenden, R., & Sons, Ltd.
John Strange Winter
Lloyd, A., & Co.
Lloyd, A. S. (Hovenden)
Lorimer & Co., Ltd.
Newbery, F., & Sons, Ltd.
Odol Chemical Works
Papier Poudré, Ltd.
Pharmazeutische - Industrie Gesellschaft (Offenbach).
Quelch, H. C., & Co.
Reuter, R. J.
Richards, J. M., & Sons, Ltd.
Rowland, A., & Sons
Sangers'
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Applications for admission to the School, or for any information respecting it, should be addressed to—

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This Institution is officially recommended by the Liverpool Chemists' Association, who yearly appoint a committee of education to superintend the course of study, and the Materia Medica Museum belonging to the Association, deposited at the Royal Institution (next door) is also open to students of this school.

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Four Months' Course for January Examination commences Sept. 1.

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Evening Classes commence Sept. 27.

Passes during past session 62%, or **double** the average for the whole country.

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The Syllabus for the 1910 Examination for the Scholarship and Prizes, which was established for competition among students of pharmacy (of either sex) registered in the United Kingdom, will be ready on or about December 1st next.

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No candidate will be admitted to the Examination in 1910 who has not completed twenty years of age, or who exceeds twenty-two on January 1, 1910.

Applications for copies of the Syllabus should be made to

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NEXT TERM COMMENCES OCTOBER 12, 1909.

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The part time Courses commence in January and resume in September. Students can join at any time, though it is obviously the best to join at the commencement of the course. The Principals will be pleased to advise intending students as to the best way of utilising their spare time.

Entries are now being received for the next term. The **FULL TIME COURSE commences on September 1. The SPECIAL REVISION COURSE** for October, on August 23. **The EVENING COURSE** resumes on September 7. The **TUESDAY COURSE** on September 7. The **WEDNESDAY COURSE** on September 8.
Intending students are requested to communicate as early as possible. Prospectus posted to any address.

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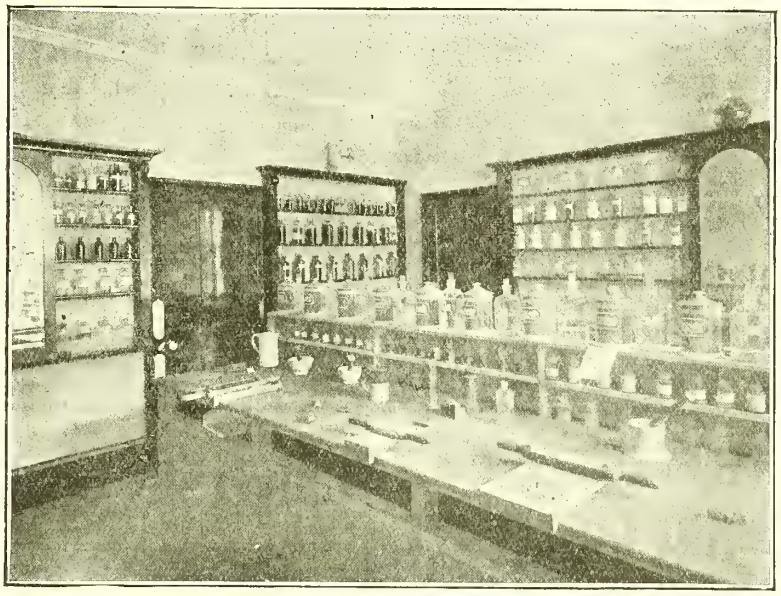
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MAJOR COURSE	October 4 ...	,, 6½	,,
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Bolton, S. H.	Whitley.
Bowis, W. J.	West Bridgford.
Braes, J. M. (Major)	Linlithgow.
Brand, A. L.	Dundee.
Brechin, T.	Boness.
Brims, W.	Edinburgh.
Brown, M.	Newmilns.
Brown, R. P.	Richmond, Yorks.
Cairnie, D. D.	Thurso.
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Drummond, D.	Callander.
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Findlay, W. J.	Burnham.
Foster, W. A.	Bishop Auckland.
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THE NEXT SESSION COMMENCES OCTOBER 5.

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Evening Classes commence September 27, 1909.

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Courses of Experimental Lectures on Chemistry, suitable for Candidates for the MINOR and MAJOR EXAMINATIONS of the Pharmaceutical Society, will be given under the direction of J. B. COLEMAN, A.R.C.S., F.I.C., commencing **September 28, 1909.**

Suitable instruction will also be given in Qualitative and Quantitative Analysis.

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* SESSIONAL FEE, each Evening per week, for Lecture and Practical Work, **10/-**

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(*b*) **MAJOR COURSE,** Wednesdays ... { Lecture, 7 to 8.15. Practical, 8.15 to 10.

Or Mondays ... { Lecture, 7 to 8. Practical, 8 to 10.

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These Courses extend over six or nine months.

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All the work is thoroughly done and no pains are spared to make each student absolutely familiar with the various Arts and Sciences which constitute the special equipment of the modern Pharmacist, not only when he faces the examiners, but also in his subsequent career. Details of the Classes, Lectures, Practical Work, &c., are given in the illustrated Prospectus, which will be sent post free on application.

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Medical Jurisprudence & Public Health ...	Dr. Templeman
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Operative Surgery—Professor F. Page, M.A., M.D., D.C.L., F.R.C.S., and J. Rutherford Morison, M.D., F.R.C.S.
Ophthalmology—Professor J. D. Wardale, M.B., B.S.
Practical Chemistry—Professor Bedson, M.A., D.Sc.
Practical Histology—Professor Sir Thomas Oliver, M.A., M.D., LL.D., F.R.C.P.
Psychology—Professor T. W. McDowall, M.A., M.D.
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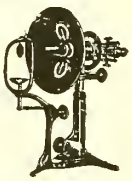
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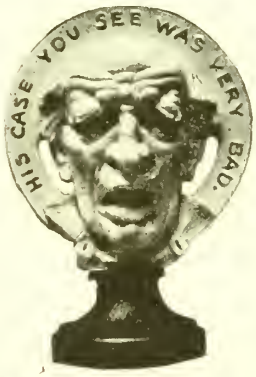
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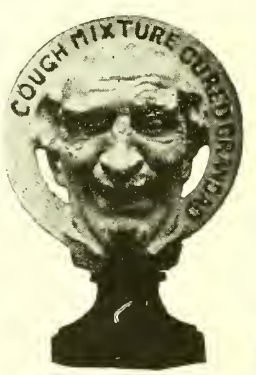
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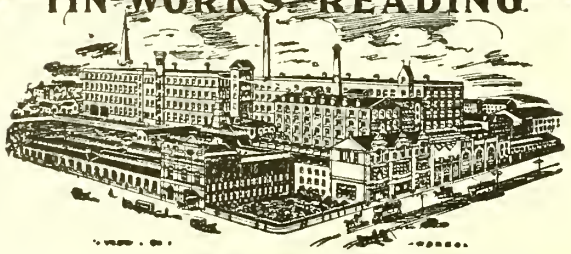
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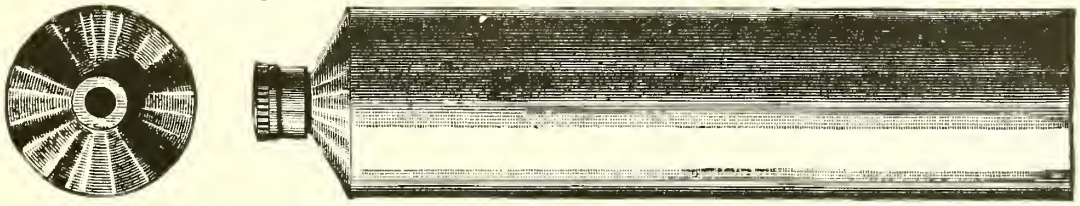
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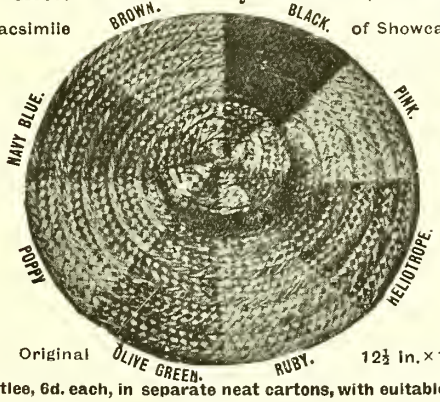
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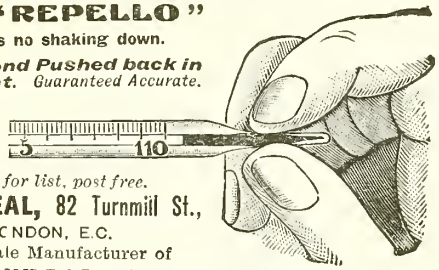
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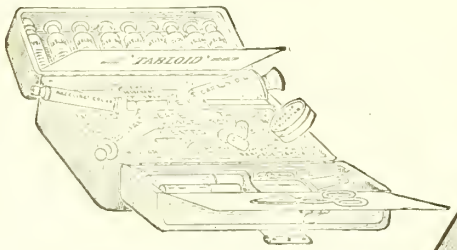
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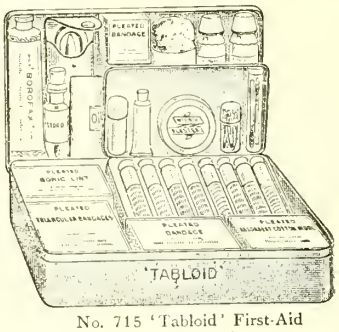
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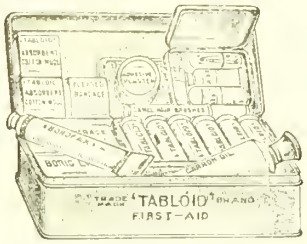
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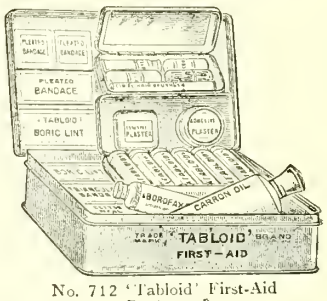
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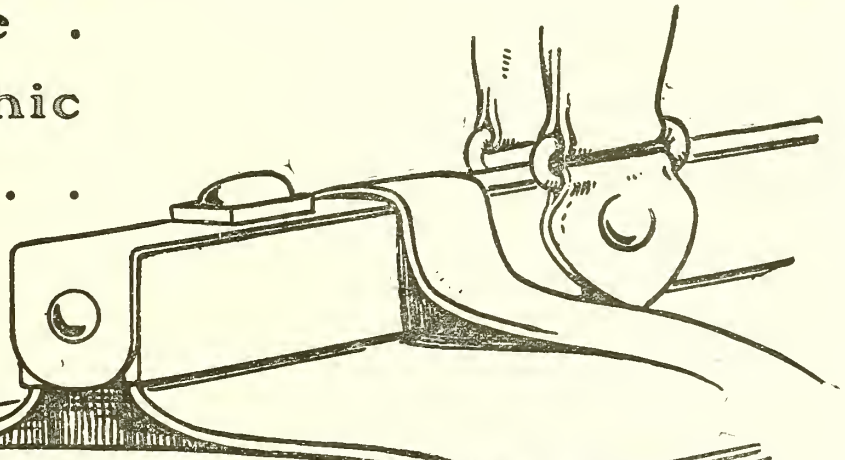
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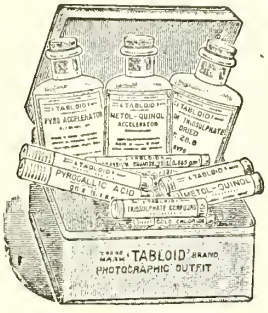
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"THE CHEMISTS' AND DRUGGISTS' DIARY, 1910."

THIS popular Annual is already in course of preparation, and firms who desire business announcements to appear in it will facilitate the large amount of work in hand by intimating to the Publisher as early as possible the amount of space they desire to be allocated to them. The permanent character of the *Diary*, which is the desk companion of subscribers to THE CHEMIST AND DRUGGIST during the whole of the year, makes it a particularly effective medium for publicity, while the original, unique, and useful "Buyers' Guide" which it contains creates business daily for *Diary* advertisers. The issue for 1910 marks the forty-second year of publication, and will, it is hoped, excel its predecessors in practical utility. Full particulars as regards terms can be obtained from the Publisher, 42 Cannon Street, London, E.C.

Summary of the Week.

Poison-licences.

The discussions before public bodies on the granting of poison-licences have been chiefly of interest at Taunton, Dumfries, and Plymouth (p. 282).

Trade Matters.

On the markets the chief features are a further advance in almond oil, and a higher market for shellac, gentian, and areca. Citric acid is steadier and copper sulphate is firm. A moderate quantity of first and second hand drugs was offered for auction (p. 319).

Societies.

The Irish Pharmaceutical Society did not muster a quorum at the last Council-meeting (p. 278). The committee of the Dublin Drug-trade Association are busy over the rules and list of officers (p. 278). The Plymouth Association is the only local Association that met last week (p. 277).

Foreign and Colonial.

Reports of the Council-meeting of the Pharmaceutical Society of Cape Colony and the Transvaal Pharmacy Board are the chief items in South African News (p. 280). In France there is a movement towards earlier closing (p. 281), and notes are given on the same page regarding the new pharmacists' diploma and the appointment of pharmacy inspectors.

Legal.

A chemist's wife was fined 5*l.* at Liverpool for selling poison. Beecham's pills, which are sold in Ireland in envelopes of four, have been imitated, and a penalty has been obtained from a Belfast shopkeeper under the Merchandise-marks Act. There is also a case under the Sale of Food and Drugs Act where a sample of cream of tartar contained 42 per cent. of foreign matter (p. 284).

Home News.

The item that bulks largest is that referring to the reports of analysts under the Sale of Food and Drugs Act. We have extracted some interesting notes from these reports (p. 277). Dr. Teed, the analyst for the City of London, gives a lecturette on the adulteration of drugs (p. 278). Among the deaths this week we record that of Mr. Chas. Ekin, a director of Messrs. Savory & Moore, Ltd., and Mr. T. P. Gostling, of Diss, who was formerly on the Council of the Pharmaceutical Society (p. 283).

Parliamentary.

The Finance Bill has been the chief subject of debate at Westminster. A question put to the Chancellor of the Exchequer regarding wine-licences has not elicited further information (p. 285). Sir William Collins is inquiring as to whether restrictions should not be placed on carbon tetrachloride as a hair-wash. Mr. E. W. Pollard, Ryde, has got a champion in the House in the person of Mr. Godfrey Baring, who is interrogating the President of the Local Government Board as to why the appointment of Mr. Pollard as analyst has not been approved of (p. 285). We also give the clauses in the Shops Bill which deal with assistants' hours and the exemption of chemists' shops from the eight-o'clock closing hour proposal (p. 289).

Education

The greater part of this issue is devoted to educational matters. We deal with the subject comprehensively under the heads of preliminary examinations (p. 293), pharmacy (p. 295), medical (p. 301), dentistry (p. 306), veterinary surgery (p. 308), science (p. 309), optics (p. 312). This is followed by particulars of scholarships and prizes available for students (p. 313), appointments open (p. 314), and books suitable for students' use (p. 314). Mr. Hall tells how he prepared for the Fairchild Scholarship (p. 315), and then is given information regarding the educational requirements in some parts of the Continent (p. 316). Assistants who desire information regarding positions in Riviera pharmacies will find the chief facts put concisely on p. 317. The experiences of Major and Minor students are given on p. 318. We review the changes in educational matters that have taken place or are foreshadowed on p. 288. Students will also find an introductory article on the microscope (p. 276), which deals with the construction of the instrument.

Corner for Students.

Conducted by Leonard Dobbin, Ph.D.

SUMMER CONTRIBUTIONS.

The Microscope for the Young Pharmacist.

By J. C. Shenstone, F.L.S.

I.

THE microscope, as an instrument of much practical use to the pharmacist, should appeal to the student. It occupies small space and affords pleasurable practice in observation and manipulation. The faculty of true perception of minute objects under the microscope, or "the microscope eye" is only attained by assiduous practice, and in the event of the student eventually occupying a position requiring a knowledge of the higher branches of pharmacy, or of analysis, an early acquaintance with microscopical procedure should stand him in good stead when seeking such a situation. The first step is to provide the microscope, of which the Minor student is expected to have a working knowledge, while the Major candidate is sometimes asked

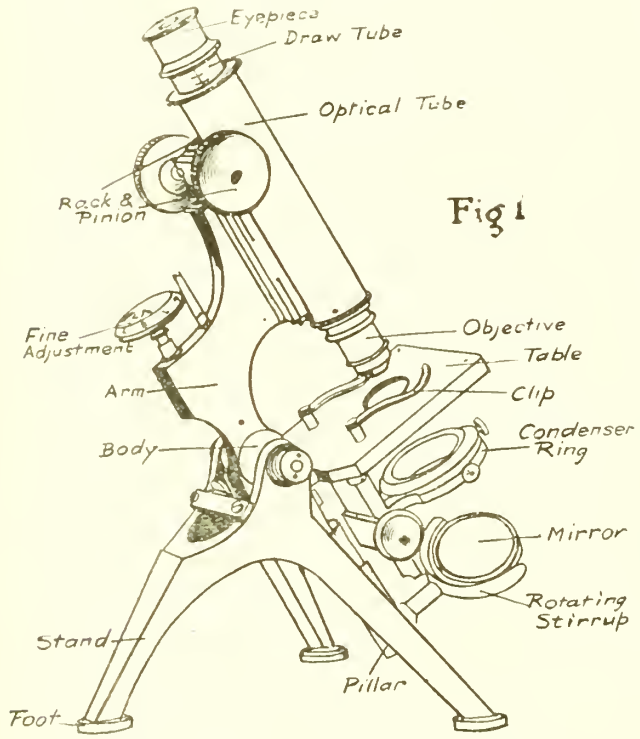


Fig 1

to expound its principles. The following short description of our first illustration is worth the student's careful consideration. The drawing is one of the Watson microscopes, which possess many of the better features of the modern microscope.

Essential Parts.

The essential parts of a microscope are the lenses, which in modern instruments are arranged in two mountings—the objective and the eyepiece. All other portions are merely accessory. The eyepiece slides into the top of a telescopic tube, while the objective screws on to the lower end. The interior of the tube is blackened, and the whole arrangement is similar in many respects to a photographic camera. A study of the second diagram, which is considerably shortened for the sake of convenience, will aid in understanding the optical principles of the microscope. The lenses of the objective would give a (real) enlarged inverted image of the object A at the position of the dotted arrow B but for the intervention of the lower plano-convex lens (field-glass) of the eyepiece (Huyghenian type), which forms a similar but smaller image at the diaphragm C. The lower lens of the eyepiece is thus really a part of the lens system of the objective. The position at C corresponds to that of the ground glass of a photographic camera, but instead of viewing the image by this method, the upper lens of the eyepiece is interposed between it and the eye, which sees a still further enlarged virtual image at E. Accordingly, both objective and eyepiece take part in the magnification. A 1-in. objective magnifies about ten diameters, and with an eyepiece magnifying six times the total magnification would be sixty diameters, and with ¼-in. objective magnifying about forty diameters, and a similar eyepiece, the magnification would be 240 diameters. The eyepiece is usually fitted into a draw-tube, which allows of the separation of the lenses and a consequent higher magnification; but the best definition is given at the distance for which the lenses are calculated—practically a 7-in. optical tube in the modern (Continental) model and a 10-in. tube in the old (English) type.

Accessory Parts.

These consist of the body and stand. The latter in our type, as seen in the first figure, is a tripod. The body, which is swung in the middle and can be turned to a horizontal position (for photographic work or when using as a camera lucida), is composed of an arm above and a pillar below, with a shelf or table (with a central aperture) to support the object, which can be firmly held by clips. The essential parts, the lenses, are mounted in a tube to exclude interference of vision by extraneous light. This tube fits into a bevelled slide on the arm, and is raised or lowered by a rack and pinion to focus the object. A micrometer-screw, working a lever-and-spring arrangement on the arm, allows for delicate focussing, and forms the fine adjustment. A tube fitted to the pillar, on which it can slide up and down or move to the right or left, carries the rotating stirrup, in which swings a mirror with plane and convex reflecting surfaces on opposite sides. This adjustment allows the mirror to be placed at the correct angle for reflecting light from the source used; the plane-mirror is used in good light, while the convex mirror affords more light with weaker sources of illumination. To the ring attachment between the mirror and stand a condenser for working with high-power lenses (usually oil-immersion lenses), or an iris diaphragm (to control the amount of light) can be fitted.

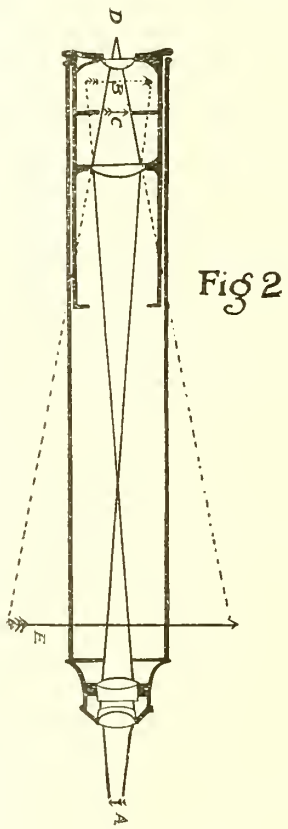


Fig 2

Selecting a Microscope.

The advice of a *confrère* accustomed to the use of the microscope would aid the prospective pharmacist to obtain an instrument which need not be discarded later—the fate of many cheap outfits for students. Books on the microscope are available at public libraries; but unfortunately they are frequently out of date, while a few minutes' demonstration by an expert will afford as much information as hours of book-reading. The stand should be quite steady in any position, and adapted to receive any necessary apparatus which the student may need as he progresses. The English tripod stand is preferable to the German horse-shoe type, which is readily upset (unless very heavy), especially when the microscope is used at an angle to avoid aching of the neck-muscles during a prolonged investigation. The body is best hinged in the middle to allow for such tilting.

Mechanical stages only hamper the beginner, and the use of fingers and clip is to be preferred, except in a few instances, when a removable mechanical stage can be used for searching work. The adjustments are important. A bevelled (single or double) rack is better than a straight-cut one, and the fine adjustment should respond quickly and with delicacy—important features with high magnifications—which in many instruments are sadly lacking. Correct centring of the lenses is essential in high-power objectives. It is awkward if the object under observation disappears suddenly when the slide is rotated or any focussing adjustment made. A hair of *Polyxenus lagenus* mounted in balsam is useful for testing the accurate centring of medium-power objectives (¼-in. or ⅙-in.), while a diatom (preferably on a dark ground) will test their definition. The objectives and eyepieces should give good illumination, with an absence of colour around dust-particles or any object in the field of view. Higher powers should have a good working-distance from the object. The selection of objectives with the best makes is now chiefly one of price. Serviceable instruments for most purposes may be purchased for 3*l*. This sum would cover the cost of a second-hand microscope, which could be adapted for more critical work (such as bacteriology) by taking high-power objectives and accessory appliances, or a new one would cost from 5*l*. upwards, with two low-power objectives (1-in. and ¼-in., or preferably for the pharmacist ⅔-in. and ⅙-in.).

In the next "Corner" some easy subjects for microscopical investigation by the beginner will be given.

English and Welsh News.

Local Newspapers containing marked items of news interesting to the Trade are always welcomed by the Editor.

Brevities.

Two Burnley fruiterers on August 4 were fined 10*s*. and costs each for selling cream containing 21.7 and 17.36 grains of boric acid per lb.

At the Sutton Coldfield Police Court on August 10, George Elliott, a well-dressed man, described as a chemist, was sentenced to a month's imprisonment on a charge of vagrancy.

The Teddington Urban District Council has decided, on the recommendation of local tradesmen, including chemists, to set aside a room for the inspection of weights and measures, so that these need not be sent to Brentford as formerly.

The Timothy White Co., Ltd., in connection with their new branch at 8 High Street, Broadstairs, are advertising that they are noted for pure drugs, courtesy, and prompt attention. Also that customers save from 5*s*. to 10*s*. in the pound by dealing with them.

A fire broke out at the Stratford oil and wax refinery of Messrs. Palmer & Co., Ltd., on August 11, probably arising from the spontaneous combustion of some casks in the grounds. The fire, which spread to the wax-melting department, was quickly subdued by the large number of firemen who were summoned.

The second annual show of the Horticultural Society of Messrs. Ferris & Co.'s employés held at Bristol recently attracted a record number of entries. The awards were as follows: Sweet-peas (six varieties)—Mr. A. Bennett, 1; Mr. W. Welch, 2; Mr. A. Hodges, 3. Carnations (six varieties—Mr. G. Baker, 1; Mr. W. Welch, 2. In the open classes Mr. J. Bennett was awarded nine points for peas and Mr. F. Bennett scored six points for pot-plants.

The medical officer of health for Battersea (Dr. C. Quin Lennane) in his annual report states that during the year 4,583 rooms and 77,425 articles were disinfected, as compared with 5,085 and 66,181 respectively in 1907. Formaldehyde, applied either in the gaseous form or in solution as a spray, was used for disinfecting the rooms in the majority of cases, but verminous rooms were fumigated with sulphur dioxide. Bedding, wearing-apparel, etc., were subjected to steam-disinfection, except articles liable to damage by steam, which were sterilised by formaldehyde in a special chamber.

Halfpenny Packet-post.

In view of the frequent complaints received of the delay of letters and postcards which have become accidentally enclosed in open packets, the Postmaster-General has issued a notice drawing attention to the desirability of enclosing halfpenny packets in covers which are not likely to entrap other correspondence. Envelopes similar in pattern to the embossed envelopes bearing a halfpenny stamp, which are on sale at post-offices, are best suited for the purpose. These envelopes have the opening at the end and a specially-shaped flap which can be turned in so as to prevent other packets or cards slipping into the envelope.

Three Towns Pharmacists' Association.

At a meeting of the Plymouth, Devonport, and Stonehouse Pharmacists' Association on August 9, Mr. H. D. Davey (President) presided over a small attendance. Mr. W. J. Martin was elected a junior member, and a committee, consisting of the President, Treasurer, and Secretary, with Messrs. E. Turney, R. F. Roper, F. A. Spear, and H. Andrews, was appointed to arrange an educational programme for the juniors. Mr. Park, having explained the Parliamentary Representation Fund, appealed for a generous support of the scheme. Mr. F. Maitland thought that the Divisional Secretaries should be asked to interest themselves in it and call a meeting of all registered chemists in the district. Mr. Spear considered that the matter would have been suitable for the Federation to work, but, as that body had collapsed, it was essential that they should bestir themselves. He favoured a periodical subscription. After considerable discussion, Mr. Maitland's suggestion was adopted.

Summer Outing.

The employés of Messrs. Kay Bros., Ltd., St. Petersgate Mills, Stockport, numbering about 350, had their annual outing to Rhyl on Monday of last week. The early part of the afternoon was spent in amusements, and at five o'clock the company met at the Town Hall for high tea. After tea, the Chairman (Mr. Thomas Kay, J.P.) made an announcement regarding the allotment of shares to old workers and the admission of Mr. Shaw and Mr. Hardcastle to the board of directors. This was received with cheers. Mr. J. W. Leather then submitted a resolution of thanks to the directors, to which Mr. Vernon Kay and Mr. Shaw replied. A drive to Boddelwyddyn was the next item on the programme, and at about 9 o'clock all assembled at the railway station for the homeward journey. Everybody was pleased with the day's outing.

Contracts.

Runcorn Urban Council.—Mr. J. H. Weston, chemist and druggist, Devonshire Buildings, Runcorn, for the supply of carbolic acid.

Blackburn Town Council.—Hardman & Holden, Ltd., for the supply of sulphuric acid to the Gas Department, and also for the purchase of gas-residuals.

Sale of Food and Drugs Acts.

All the following samples examined by the Paddington analyst during last year proved to be genuine: Ammoniated tincture of quinine, 3; arrowroot, 2; olive oil, 2; sweet spirit of nitre, 1.

The following samples were analysed during the past quarter in the county of Southampton: Citric acid, 1; tartaric acid, 1; milk of sulphur, 1; cream of tartar, 1; arrowroot, 1. All were genuine.

The Oxfordshire analyst reports that six samples of soda-water were taken for analysis during last quarter, of which one contained no bicarbonate of soda, and two others were made with water of doubtful quality.

Only one drug sample (compound tincture of bark) was taken formally in Lewisham last year. It proved to be genuine. Of three samples of camphorated oil taken informally, two proved to be deficient in camphor, and in the third instance mineral oil was the solvent used.

The Lambeth analyst (Dr. J. Muter) states in his annual report that three samples of drugs were taken during the year, and one of decoctum aloes co. was declared to be 64 per cent. deficient in alcohol. The summons was withdrawn on the legal technicality that the analyst's certificate was irregular.

The Southwark analyst examined the following samples during the past year: Camphorated oil, 9; eucalyptus oil, 5; glycerin, 4; tartaric acid, 4; sulphate of quinine, 3; olive oil, 2; compound liquorice powder, 1; milk of sulphur, 1; fluid magnesia, 1; oil of cloves, 1; oil of peppermint, 1; castor oil, 1; crushed linseed, 1. All were up to the B.P. requirements.

The Westminster analyst reports that ten different drugs were taken during last year, which on the whole proved satisfactory. One sample of saffron contained 10 instead of 7 per cent. of ash. A sample of oxymel of squill was made with sugar instead of honey. The vendor was fined 2*l*., with 12*s*. 6*d*. costs. In nine instances the quinine-wine supplied was up to the pharmacopœial requirements, but in two cases St. Raphael wine was supplied. The prosecution in one instance fell through, as the Magistrate was not satisfied that the buyer had not been informed. A summons for selling fluid magnesia 6 per cent. deficient in bicarbonate of magnesia was dismissed on a technical point.

The annual report of the Stepney medical officer (Dr. D. L. Thomas) states that the following drug samples were taken during the year: Camphorated oil, 6; milk of sulphur, 5; cream of tartar, 4; lime water, 3; crushed linseed, 3; tincture of iodine, 3; castor oil, 2; powdered rhubarb, 2; olive oil, 1; tincture of iron, 1; ammoniated tincture of quinine, 1. The adulterated samples were as follows: Milk of sulphur containing 75 per cent. of sublimed sulphur; tincture of iodine 6 per cent. deficient in iodine; ammoniated tincture of quinine 12 per cent. deficient in quinine; lime-water not made with distilled water, and another sample totally devoid of active ingredient; tincture of iron 7 per cent. deficient in iron; and powdered rhubarb containing 20 per cent. of foreign starch. The vendor of the rhubarb sample was fined 10*s*., with 25*s*. costs, and the other vendors were cautioned. The percentage of drug-samples not up to the standard was 22.6, as compared with 15.3 per cent. of food samples.

The public analyst for the City of London (Dr. Frank L. Teed) states in his quarterly report that all the twenty-seven drug samples examined were genuine—an immense improvement on the occasion when 87½ per cent. of the drugs were reported as not being up to the standard. His remarks on this circumstance are as follows:

> The value of the Acts as preventive measures cannot be over estimated, and by "preventive" must be understood not only preventive against fraud, but preventive against negligence. A drug wrongly compounded through carelessness may be a much more serious matter for the purchaser than a deliberately fraudulent substitution of margarine for butter. The latter would only affect the purse, but the former would affect, or possibly fail to affect, the person. The administration of drugs of unknown composition in unknown doses may have surprising results, but is rough not only on the patient, but on the medical practitioner. This state of things was not approved by the Legislature, and the Sale of Food and Drugs Acts were passed to remedy it, among other abuses, and, judging from the present quarter's results, the Acts, when rigorously administered, are capable of doing so effectively.

The Kent County Analyst (Mr. M. A. Adams) reports that all the drugs (fifty three samples) examined during the past quarter were genuine. The following were included in this number: Seidlitz-powder, 11; cream of tartar, 7; olive oil, 5; crushed linseed, 5; glycerin, 4; liniment of camphor, 3; tartaric acid, 3; citric acid, 3; spirit of camphor, 3; tincture of iodine, 2; beeswax, 2; spirit of nitrous ether, 2; cod liver oil, 1; paregoric, 1; and tincture of rhubarb, 1. Mr. Adams states in his report that many worthless disinfectants are on the market, and that he considers disinfectants ought to be placed within the scope of the Sale of Food and Drugs Acts and comply with definite standards, as at present they escape all control.

Birmingham Notes.

The "Mail" says local tradesmen and assistants welcome the Shop-hours Bill.

The death of Joseph Evans on August 7 at the chemical-works of Messrs. J. & E. Sturge was due to injuries received from the bursting of a cylinder while being charged with carbonic acid gas in the manufacture of fluid magnesia.

Considerable feeling has arisen against the University Department of Brewing owing to an advertisement appearing in the "Post" announcing that "a department of analytical work is established in connection with the school. Particulars may be obtained from the Professor."

A well-known pharmacist entered a high-class city restaurant last week, and a pamphlet was put into his hand with the request "would he try that? 'Bulgarian diet,' curdled milk (Professor Metchnikoff's process)." The cases outlined in the list in which sour milk could be used with advantage included "intestibal sepsis, typhoid fever and its sequelæ, rheumatoid arthritis, and arteriosclerosis." As the recipient was not one of these "cases," he regaled himself on his usual cup of coffee and a bun.

Cricket.

Sheffield Pharmacy Athletic Club.—The credit of obtaining a win by eight runs in the match with the St. Stephen's team was mainly due to Messrs. Stather and Lansdell, with scores of 40 and 20 respectively in the total of 80 runs compiled by the chemists. The former also took three wickets for 32 runs.

Irish News.

Local Newspapers containing marked items of news interesting to the Trade are always welcomed by the Editor.

Pharmaceutical Society of Ireland.

The monthly meeting of the Council was to have been held on Wednesday, August 4, at 67 Lower Mount Street, Dublin; but as a sufficient number of members to constitute a quorum did not attend, no business was transacted. The following members were present: The Vice-President (Sir W. J. Baxter) and Mr. William Doig, Belfast; Mr. Goldon (Birr), and Messrs. G. D. Beggs, David Watson, and Dr. C. Dunlop, the newly co-opted member.

Drug-contract.

Messrs. Boileau & Boyd, Ltd., Dublin, have been appointed contractors for the supply of drugs and medicines to the Dungarvan Union.

Personal.

In the report of the examinations of the Royal College of Surgeons (Edinburgh), held in July, occurs the name of Mr. S. E. A. Acheson, chemist and druggist, Belfast, as having passed the third examination.

Irish Manufacturers.

An exhibition of goods of Irish manufactures was held last week at the Ulster Hall, Belfast. Among the exhibitors were Messrs. Harrington Bros., of Cork, who showed paints and varnishes and agricultural chemicals. Another exhibit—McCanton's soap and toilet preparations—has since been transferred to the premises of Messrs. Wm. Dobbin & Co., Ltd., North Street, Dublin.

Window-smash.

Private William Mansfield was at the Athy Petty Sessions on August 6 charged with breaking a plate-glass window at the pharmacy of Mr. R. I. Eccles, the Square, Athy, and stealing two tins of bath-salts, valued at 2*s*. Defendant pleaded guilty, and Lieutenant Faukoner said the damage was done apparently so that Mansfield could get out of the Army. Defendant was sentenced to three months' imprisonment for the theft, and for the window-breaking was fined 5*s*., and directed to pay 3*l*. 10*s*. compensation, or in default to go to prison for two months.

Dublin Drug-trade Association.

This newly-started Association has been holding committee meetings with a fair degree of regularity, and many details of procedure for the smooth working of the organisation have been put into shape for submission to the general meeting in the Pharmaceutical Society's rooms which will be held shortly. A large number of retail druggists, chemists, and pharmacists have already been enrolled. A provisional list of office-bearers has also been approved of.

Seychelles Cinnamon.—"Wild cinnamon-bark" figured as a new export from the Seychelles last year, 1,205 tons being exported, valued at Rs. 44,322.

Scots News.

Local Newspapers containing marked items of news interesting to the Trade are always welcomed by the Editor.

Aberdeen.

At the Sheriff Court on August 10, John Gauld (19), an apprentice with Mr. James Spence, chemist and sub-postmaster, 7 Mounthooly, Aberdeen, was charged with stealing two blank postal orders, for 10*s.* and 4*s.* respectively, and cashing them with the forged initials thereon. Accused pleaded guilty, and his solicitor said that Gauld took the money in order to pay the fees for an examination, and had returned the money a day or two after taking it. The youth was bound over in the sum of 10*l.*, which his adopted father found.

Dundee.

The new Technical College which is being built at a cost of 70,000*l.* will only be partly completed at the opening of the session on October 15. The finished building will provide accommodation for 2,000 students, and each subject will have its complement of rooms. The instruction will include classes in pharmacy, chemistry, physics, botany, and photography, so that the outlook for local apprentices and assistants who are studiously inclined is most encouraging.

Edinburgh.

A local young lady's *critique* on our Jubilee Number, "My word, what volumes of it!"

Teams drawn from the employés of Messrs. Raimes, Clark & Co., Ltd., and J. F. Macfarlan & Co. met in a well-contested and enjoyable two-rinks bowling-match at the Regent Road Green on August 8. The representatives of the latter firm won by fifteen shots. A return match will be played shortly.

Photographic materials are going well, thanks to the brighter weather. It pays to put old photographic stock in the window sometimes, to help to make a large show. One pharmacist, who acted thus, disposed of a well-matured camera and an ancient developing-set at very little below their former prices.

Glasgow and the West.

An outbreak of fire occurred last week on the premises of a licensed grocer in Main Street, Muirkirk, which quickly involved the adjoining premises, including those of Mr. A. S. Templeton, chemist and druggist. The lack of a fire-brigade rendered it impossible to save the buildings, and damage to the extent of about 3,000*l.* was done to the block. The loss is stated to be covered by insurance.

The comments by Dr. Farquharson on "so-called chemists' shops" at Glasgow in the discussion *re* dispensing by doctors at the British Pharmaceutical Conference has evoked comments in the local Press. The "Herald" says there is probably a genuine need for such shops, "because in many districts it would not pay a regular pharmacist to open a shop. . . . In many parts of England, even in fair-sized towns, the combination of physician and pharmacist is universal. But the method of the combination where it exists in Scotland may introduce a questionable element." The "Evening News" says: "It had not occurred to the patrons (of doctor's shops) that there was any particular hardship in being robbed of the opportunity of pay a chemist independent" (*sic*).

The Week's Poisonings.

Eleven fatalities, including three misadventures, have been recorded from poisoning during the week. At the inquest consequent upon the suicide of John Flint (38), a retired confectioner, the analyst's report showed that the stomach-contents included prussic acid. Deceased had recently taken out a box containing "silvering-solution."—At the inquiry into the death of Mr. Charles Ekin, pharmaceutical chemist, of Surbiton, who had been in ill-health for a long time, it was stated that deceased had probably taken a considerable quantity of cocaine hydrochloride and about 2 dr. of chloral hydrate.—Laudanum, taken as a cure for toothache, was the cause of the death of a young blind man at Smethwick.—Wm. J. Stevens (4) died in the Portsmouth Hospital from the effects of carbolic-acid poisoning. The child was found with a brown jug in his hand containing the poisonous fluid, a bottle of which had been left on the table near some chocolate syrup of a similar colour.—At the inquest on Mary E. Grubbles (53), of Rochdale, who died in consequence of taking carbolic acid, the Coroner remarked that carbolic acid "was not a scheduled poison," but that chemists usually sold it in distinctive bottles, and did all they could to warn the buyers as to its poisonous properties. Suicide while of unsound mind, said the jury.—The same verdict was returned at the inquest on George Betts, greengrocer, Derby, who also took carbolic acid to end his monetary troubles.—Wm. J. W. Julian, a theological student, committed suicide owing to his failure at a recent degree examination. At the inquest Dr. Trevor stated that death was due to carbolic poisoning and to immersion in the river Thames.—An unemployed machine-ruler, named James Montier (64), used spirit of salt for suicidal purposes.—The same corrosive fluid was taken for the same purpose by John Day (22), labourer, Tottenham, who was depressed on account of love-troubles.—Acetic acid, for use as a wart-solvent, taken in mistake for a toothache-mixture, caused the death of Ellen Grant (17) at Hull.—At the inquiry into the death of Jane Capewell (29), of Derby, it was found that death was due to phthisis brought about by pills containing lead for an improper purpose.

Information Wanted.

Inquiries for the names and addresses of manufacturers, or other trade information, not traceable by reference to the advertisement-pages of "The Chemist and Druggist" and the "C & D. Diary," or not filed in our private register, are inserted here free of charge. Postcard or other replies to any of the subjoined inquiries (addressed to the Editor "The Chemist and Druggist," 42 Cannon Street, London, E.C.) will be esteemed.

130/55. Where can Populin be obtained?

133/19. Where can Papier Dido be obtained?

132/4. Where can Parker's sapo mollis be obtained?

129/68. Where can "Glen Mills" medicated paper be obtained?

130/28. Who are the makers of Daros or Davos disinfecting-powder as used for kennels?

132/17. Makers of patent triangular poison-bottles fluted on two sides, corners concave.

129/54. Who are the manufacturers of "Kentucky Extract," supposed to be made by a firm in Bremen?



The above illustration, representing a seal balancing a bottle of Odol, forms part of a performance taking place nightly at a Paris Music-hall, and is the latest advertising idea of the proprietor of this popular dentifrice.

Too Optimistic.—A contemporary, referring to the all-day excursion at the Newcastle meeting of the British Pharmaceutical Conference on July 30, states that "fortunately, most favourable weather prevailed." Pouring rain may from the point of view of romantic people be the most favourable for inspecting Naworth and Lanercost, but personally we prefer fine weather, even if the sun is absent.

South African News.

(From the "C. & D." Correspondents.)

Note.—"The Chemist and Druggist" is regularly supplied by order to all the members of all the Pharmaceutical Societies in British South Africa, viz.:

South African Pharmaceutical Association.
Pharmaceutical Society of Cape Colony.
Natal Pharmaceutical Society.
Transvaal Pharmaceutical Society.
Rhodesia Pharmaceutical Society.
Northern District Chemists' Association.
Pharmaceutical Society of Orange River Colony.

Cape Colony.

The Pharmacy Board.—Dr. Darley-Hartley, of Cape Town, editor of the "South African Medical Record," was, at a recent meeting of the Colonial Medical Council, appointed to represent that body on the Pharmacy Board during the absence of Dr. F. C. K. Murray (President), who is the nominee of the Medical Council on the Board.

Chemists' Failures.—Three more recent failures among members of the drug-trade have been recorded recently. In each case depreciation in landed property was the cause. Mr. F. Varley, late of Wynberg; Mr. M. Tothill, of Cape Town; and Mr. A. E. A. Tothill, proprietor of the oldest pharmacy in the same city, are the latest victims of the land boom of a few years back. Mr. Varley's business was disposed of some time ago, while in each of the other instances the proprietors have continued their respective businesses, the amounts lost in each case on the chemists' business proper being trivial.

Pharmaceutical Society of Cape Colony.

A Council meeting was held at the Y.M.C.A. Rooms, Long Street, Cape Town, on July 15. Mr. W. Froembling presided, and the following councillors were present: Messrs. F. C. Mathew and J. S. North (Vice-Presidents), J. Sowden, G. Cleghorn, W. Turnbull, H. R. Peck, J. Clayton Smith, and J. Dell (Secretary). The approaching Pharmacy Board election was the first subject considered, and it was decided, on the proposal of Mr. J. Sowden, seconded by Mr. J. Clayton Smith, that a committee of four be appointed to confer with other societies with regard to the nominations of chemists' representatives at the next election of the Pharmacy Board. Mr. G. Cleghorn proposed that the committee consist of Messrs. W. Froembling, F. C. Mathew, J. Sowden, and J. S. North. This was carried unanimously. The acquisition of rooms as permanent headquarters for the Society was next brought forward by a report from a committee formed at the last meeting. The report recommended the acquisition of a room in Mercantile Buildings, Hout Street, a few doors from the Y.M.C.A. building. The President briefly outlined the proposals the Society had in view, giving special attention to the educational facilities it was intended to introduce for students entering for pharmaceutical examinations, and expressed his willingness to give lectures on botany and materia medica each Thursday. Donations and loans of books or articles of interest were solicited from firms interested, and the promises of support already forthcoming are very encouraging. A guarantee fund to cover the first year's rent was suggested, and this was at once promised by those present. The committee were instructed to take the room and make further necessary arrangements for its occupancy, reporting to the next meeting of the Society, which, it is hoped, will be held in the new quarters.

A special general meeting of the Society followed the Council-meeting. Mr. Froembling presided, and in addition to the above Council members the company included Messrs. J. Patterson (Burroughs Wellcome & Co.), C. Merry, C. Weller (Lennon, Ltd.), G. R. Tutt, W. A. Sleggs, W. Aitken, W. E. Crow, A. E. A. Tothill, J. Francis, and the Secretary.

The agenda comprised the following four propositions:

1. That a committee of three be appointed to watch the interests of the pharmacists of the Cape in the matter of the revision of the Customs tariff.
2. That the report of November 1908 *re* retail lists be entered on the records of the Society.
3. That H.E. the Governor be invited to consider the desirability of giving effect to the provisions of Section 16 of the Medical and Pharmacy Act Amendment Act, 1899.
4. That the Government be asked to enforce the law respecting the sale of proprietary medicines containing scheduled poisons, as laid down in Section 45 of the Medical and Pharmacy Act, 1891.

The first was carried unanimously on the proposal of Mr. W. E. Crow, seconded by Mr. Peck. A committee of three was decided upon, consisting of Messrs. H. Evans (Petersen, Ltd.), M. W. E. Tullett (Allen & Hanburys), and W. E. Crow, to report to the Society as occasion required. The second resolution was briefly explained by Mr. Crow, and on his proposal, seconded by Mr. Peck, was carried. Some discussion ensued on the third proposal, Mr. Crow speaking at length, and being followed by the President, who gave a spirited description of various discrepancies in Government regulations which the enforcement of this section would remove. The resolution was carried unanimously. Mr. Crow explained fully the necessity of a strict enforcement of resolution No. 4, quoting from the case of the Pharmaceutical Society of Great Britain *v.* Piper, also Vol. 68 of the "Law Times," in addition to the Colonial Government's regulations as to the sale of poisons. He compared the present regulations regarding the sale of Easton's tablo'ds and Fellows's syrup, the latter of which is sold by general dealers, while the sale of the former is restricted to chemists. At some length he explained the ambiguity existing regarding the definition of a patent and a proprietary medicine, his remarks being followed with close attention. The President next spoke, and referred to the laxity of indiscriminate licence-granting, and the inability of the Government to define a patent medicine. Mr. F. C. Mathew briefly summed up a two-hour debate by stating that no new legislation was required, but that the authorities should be requested to enforce the present Acts. He considered that a deputation is unnecessary and undesirable, but that a letter sent through the Colonial Secretary to his Excellency the Governor would probably have the desired effect. The meeting being of the same opinion, the proceedings terminated.

Transvaal Pharmacy Board.

The monthly meeting of the Transvaal Pharmacy Board was held in the Board's office, Johannesburg, on July 16, under the presidency of Mr. B. Owen Jones, M.L.A., others present being Dr. J. van Niekerk, Messrs. J. H. Dinwoodie, R. Butters, and J. R. Jones. It was formally reported that the Medical, Dental, and Pharmacy Further Amendment Act had been gazetted. By this Act Section 16 of the 1904 Ordinance is repealed and other provisions made for the conduct of future elections of members of the Board in accordance with regulations to be authorised by the Governor in Council. This alteration has been made on the representations of the Pharmacy Board and Medical Council in order to provide for the nomination of candidates previous to election and for other necessary amendments of the method of voting.

The promulgation of the Opium Trade Regulation Amendment Act was also reported. The chief provisions of this enactment are (*a*) the prohibition of the opium-smoking habit after the lapse of a period of six months from the date of the taking effect of the Act—during which period persons addicted to the habit are to be allowed to purchase not more than 4 oz. of gum or extract of opium, and (*b*) the regulations of the prescribing and sale of opium or extract of opium for strictly medicinal purposes. The Secretary was authorised to take steps to notify all chemists and druggists practising in the Colony of the changes brought about by this Act.

A communication was received from the Assistant Colonial Secretary requesting the Board's observations on a letter from the general manager of the Central South African Railways asking whether the sale of dagga or Indian hemp in the Transvaal was subject to restrictions similar to those in force in the Orange River Colony. It was decided to reply that the sale of this drug was not subject to the provisions of Part 5 of the Pharmacy Ordinance of the Transvaal, and that, while in sympathy with the desire to prohibit the use of the drug by natives, the Board did not see that this object would be attained by proclaiming dagga a poison within the meaning of the Act, having regard to the fact that it grows extensively as a weed all over the country and is rarely, if ever, procured by the natives by purchase.

A list of permits to import opium, recommended during the preceding month, was confirmed.

The annual report of the Natal Pharmacy Board for the year 1908 was received, and the following were admitted to practise as chemists and druggists in the Transvaal: George William Hay and Adam Stewart, chemist and druggists, Great Britain, and Leonard Jennette, pharmaceutical chemist, Ireland.

An Exhibition of Olive Oils will be held at Aix-en-Provence, Bouches du Rhône, France, in February 1910. It is expected that olive oil will be exhibited from all producing countries, and that the subject of adulteration of oils will be thoroughly investigated.

Seychelles Essential Oils.—The distillation of essential oils (says the annual report of the Governor of the Seychelles for 1908) has been taken seriously in hand. Oils have been distilled from cinnamon bark and leaves, from clove-leaves, bigarade, lemongrass, and citronella. The market for these oils is capricious, but clove-leaf and cinnamon oils have been sold at good prices. Plantations have been made of ylang-ylang and cardamoms.

French News.

(From the "C. & D." Paris Correspondent.)

Lost Radium.—A tiny box containing radium bromide was missed by a doctor connected with a Paris hospital after he had alighted from a taxicab a few days ago. The value of the radium is about 800*l.*, and as the risk of carelessly handling the box or its precious contents is great, a notice was quickly circulated in the Press. So far the radium has not been returned to the doctor.

Academy of Sciences Prizes.—At the meeting of this Academy on August 2 the awards of a number of prizes were announced, among which may be mentioned 2,500f. (100*l.*) to MM. J. Bergonié and L. Tribondeau for their researches connected with *x* rays and high-frequency currents, and a prize of 4,000f. to M. W. M. Haffkine for his work on cholera and plague vaccination. The Bréant prize of 100,000f. (4,000*l.*) for the discovery of a means of curing Asiatic cholera remains unclaimed.

For Services Rendered.—After the recent banquet of the Parisian Pharmacists' Association ("Chambre Syndicale des Pharmaciens de la Seine"), the representative of the Minister of Public Instruction, who had assisted at this social and fraternal gathering, "decorated" M. Labelonye, Treasurer of the Association, with the violet rosette of "Officer of Public Instruction," and M. Geslin (Treasurer of the Pharmaceutical Mutual Pension Fund) with the ribbon of "Officer of the Academy."

For Earlier Closing.—The Paris pharmacists' assistants, after holding several meetings, have appointed a committee to induce employers to close their pharmacies at 8 o'clock. They suggest that certain pharmacies be kept open at night in each quarter of the city by rotation, special assistants being employed, or the opening of municipal night pharmacies. They profess to be ready to adopt the "most energetic measures" for obtaining satisfaction. In the centre of Paris 9 o'clock is a very general closing-hour at present, and this applies to practically all the pharmacies doing British and American trade; but usually the assistants take it in turn to leave earlier.

The Pharmacist Diploma.—In connection with the reform of the curriculum for the diploma of *pharmacien*, it is interesting to refer to the conditions for obtaining it, especially as they were drawn up by Professor Guignard, Director of the Paris School of Pharmacy, who has the distinction of being the "first pharmacien of France." The course of study will last five years, one year being served as an apprentice in a pharmacy and four years at a school of pharmacy. Sixteen years is the minimum age fixed for apprenticeship, and the diploma of Bachelor of Arts is required. During the four years at a school of pharmacy the student must take out sixteen quarterly courses, and during this time practical work is obligatory. Examinations must be passed at the end of each year, and there are three probationary tests. Students already inscribed will continue under the old conditions, but are given the option of changing to the new curriculum, which alone will be available from November 1, 1911.

Pharmacy Inspectors.—Some months ago the Minister of Public Instruction asked Professor Guignard (Director of the Paris Superior School of Pharmacy) if there would be any objection to nominating a Montpellier pharmacist as inspector of pharmacies under the new Adulteration Act. M. Guignard, having consulted M. Vaudin (President of the General Association of French Pharmacists), replied in the negative. A few days afterwards, however, M. Vaudin discovered that the pharmacist in question, although he had formerly occupied the post of inspector, no longer belonged to the local Association, and that there is a strong feeling against his nomination among the Southern pharmacists. M. Vaudin therefore begged the Minister to choose if possible a candidate from the list presented by the Director of Montpellier Superior School of Pharmacy which only included names approved by the local professional body. The action of the Minister is appreciated as showing a desire to appoint only such inspectors as may lead to a smooth working of the Adulteration Act, while, of course, ensuring its proper application.

Trade Notes.

Himrod's Cure for Asthma is shortly to be put on the market in a new-style package.

Stocktaking.—Messrs. Burroughs Wellcome & Co., Snow Hill Buildings, London, E.C., are closing their warehouses on August 31 for the purpose of stocktaking.

The Erasmic Window-display Competition is for 250*l.* cash prizes. It closes on August 31. Particulars were given in the inset of the Erasmic Co., Ltd., in the Summer Number.

Opticians' Outfits.—Mr. Sydney Richardson, The American Optical House, 12-13 Henrietta Street, Strand, London, W.C., announces that he is prepared to arrange deferred payments for expensive ophthalmological instruments.

Shop-fitting. — Messrs. Sanger, 253 Euston Road, London, N.W., have recently fitted up a new pharmacy for Mr. Davies, Haverfordwest, and completed structural alterations at Messrs. Manrieve's pharmacy, Oxford Street, London, W.

Thiocol Tablets.—The price of these tablets, made by the Hoffmann-La Roche Chemical-works, Ltd., 7 and 8 Idol Lane, London, E.C., and referred to in the Summer Number and Jubilee Issue, should have been given as 1*s.* 6*d.* per tube of twenty-five.

Otto of Rose.—Messrs. Shipkoff & Co., Kazanlik, Bulgaria, announce in our advertisement pages that the new stock of otto of rose is now ready for delivery. A striking report by Mr. E. J. Parry is given. The London agents are Messrs. G. P. & J. Baker, Ltd., 9 Warwick Square, Newgate Street, E.C.

Hot-water Bottles.—At the time of writing, hot-water bottles are not indicated by the climatic conditions, but this is the time of year when buyers look ahead for the requirements of the winter. The Fulham Pottery and Cheavin Filter Co., Ltd., Fulham, London, S.W., call attention to their "Adaptable" hot-water bottles. These are of earthenware, and customers can have their names printed on one side. For this purpose orders for the winter should be put in hand at once.

Fly-catchers.—The spell of hot weather has induced Messrs. Kay Bros., Ltd., St. Petersgate Mills, Stockport, to send us samples of the "Vampire" and "Flysac" fly-catchers, which they manufacture. These have been referred to before in our columns, but it is an appropriate time to remind chemists that the packing of these fly-catchers is such that deterioration on keeping is prevented. Tenasitine cement, in 1*d.*, 2*d.*, 3*d.*, and 6*d.* tubes is another good line made by Messrs. Kay Bros.

Business Changes.

Properly authenticated business notices (not being advertisements) are inserted in this section free of charge if promptly communicated to the Editor.

The Timothy White Co., Ltd., have opened a new branch at 66 High Street, Ventnor.

Mr. H. W. Cave, chemist and druggist, has taken over the business of Mr. J. Thomas, trading as "Ryland's Drug-stores," at 372 Harrow Road, London, W.

Mr. E. Gittins, chemist and druggist, Madeley, Staffs, has purchased the business of Mr. Thomas L. Brown, chemist and druggist, 7 Market Place, Buckingham.

Messrs. W. S. Poll & Son, chemists, 32 Regent Street, Yarmouth, have removed to new and handsome premises erected at No. 41 in the same thoroughfare. Messrs. Poll & Son had occupied the old premises for forty-seven years.

Mr. R. F. Stroud, the proprietor of "Holland's Distillery," Market Deeping, Lincolnshire, has disposed of the business to Mr. F. P. Madden, formerly with Messrs. W. H. Hobbs & Co., 5 Trinity Square, London, E.C. Mr. Stroud sails for the United States on August 21, and intends visiting the peppermint districts of Michigan, etc.

Agri-Horticultural Poisons.

Notices of Application

for licences under Section 2 of the Poisons and Pharmacy Act have been lodged with the local authorities named.

Carmarthenshire.—J. L. Jones, Albion House, Pencader, and Jones Bros., Pumpsaint.

Chorley.—J. Winder Stone, grocer and seedsman, 6 Market Street; Francis W. Jardine, florist, 57 Market Street.

Kincardineshire.—Craigie & Mitchell, Laurencekirk.

Richmond-on-Thames.—L. R. Russell, nurseryman, Richmond Nurseries.

Twickenham.—H. E. Fordham, nurseryman, Richmond Road.

Consideration of Applications.

Bradford.—The Watch Committee recommend that the application of Messrs. John Brook, Market Hall, and T. Horsman & Co., Godwin Street, florists, be granted.

Cheshire.—At the last meeting of the County Council, Mr. J. J. Evans protested strongly against the issuing of licences.—The Chairman said his statements had been made before the committee, which decided to grant applications.

Cumberland.—The County Council considered on August 4 the recommendation of the General Purposes Committee that a further twelve applications which had been received be refused.—The motion of Mr. Shepheard, that the matter be referred back, as "it was a very great hardship to refuse licences to those who had already built up a business," was carried.—Mr. Grainger said the committee was following out a policy of only issuing licences where it was thought the public convenience demanded them.

Kent.—The County Council have granted six out of eleven applications, the remaining five being refused.

Macclesfield.—The Town Council on August 4 considered an application from David Hanna, nurseryman, 8 Market Place.—Mr. Sydney Wild, Ph.C., opposed the application, which was referred to the Health Committee.—A motion to grant the application failed to find a seconder.

Applications Granted.

Aberdeen.—The Public Health Committee's report, in which it was recommended that all applications be granted and that the Sanitary Inspector be appointed officer under the Act, came before the Town Council on August 9.—Mr. Henry J. Gray opposed the motion that the applications be granted, on the ground that it had not been shown that Aberdeen chemists did not provide sufficient facilities.—It was decided to issue licences by thirteen votes to eight. (The full voting power of the Council is thirty-four.)

Breconshire.—Thos. Williams & Son, Erwood; Wm. Price & Co., Ltd., Builth; D. W. Davies, Garth; and J. Parry & Co., Sennybridge.

Dumfries.—The applications of Messrs. Jas. G. Jolly (Thos. Kennedy & Co.), Wm. Blake (J. Poynter, Sons & Macdonald), and Alex. M. Mackintosh, 41 White Sands—seed merchants—which the Finance Committee recommended for grant, came before the Town Council for disposal on August 5.—Mr. Blake had since written withdrawing his application, as he did not intend to enter into the business at present.—A motion to grant the application of Mr. Jolly was carried.—The Provost said Mr. Mackintosh's application was different, as the applicant had not been engaged in the business prior to the Act.—Mr. O'Brien moved that it be granted on the ground that licences for the sale of poisons are granted in the same way as liquor licences—according to the requirements of the community. In a large burgh like Dumfries there was room for three licences, while if that number proved to be too many some of them could drop out next year.—Mr. Smart said on looking round anyone could see a number of chemists' shops in which sheep-dip was hardly asked for, and the chemists themselves had shown that there were ample means of obtaining these poisons.—Mr. Connolly said that seeing there were only three, and all were ratepayers, he did not see why the licences should not be granted.—The applications were granted by thirteen votes to two.

Girvan.—The application of the following ironmongers—Jas. Crosbie, John Lawson, David McMaster, and Anderson & Co., all of Dalrymple Street, and Provost A. Telfer, 8 Bridge Street—came before a special meeting of the Town Council recently.—The Clerk intimated that he had received no formal objection from the local chemists.—A report of proceedings in the Sheriff Court at Ayr in 1903, in which the ironmongers of Girvan bound themselves not to sell poisonous substances, was submitted by Mr. Smith. He also read extracts from the Pharmacy Act dealing with the case.—Mr. Crosbie said there was a misstatement in the circular. He had never declined to sell dips, which he had sold and advertised for thirty-eight years.—Mr. McMaster said the manufacturers would send agents and take direct orders if the supply by ironmongers was stopped.—Provost Telfer said he was not in the least anxious whether he got a licence or not.—It was agreed to grant four applications and adjourn that of Messrs. Anderson & Co. as it was not in order.

Grantham.—W. & J. Brown, florists, Westgate, and C. Sharpe & Co., Ltd., seedsmen.

Kesteven (Lincs.).—At a meeting of the County Council on August 4, the General Purposes Committee reported that applications had been received from Messrs. Chas. Sharpe & Co., Ltd., seed merchants, Sleaford, and Wm. & Jas. Brown, nurserymen, Stamford. The committee received objections from chemists in Lincoln, Sleaford, and Stamford districts. The committee recommended that the licences be granted. Another application had been received recently from Slater, Thompson & Son, Metheringham.—The whole of the applications were granted.

Pembrokeshire.—David Evans, Llanfyrnach.

Plymouth.—The Town Council had before them on August 9 the report of the Watch Committee (*C. & D.*, July 31) in favour of granting six applications.—Dr. Swain opposed the recommendation, as it is inadvisable to extend facilities for the sale of poisons.—Mr. S. H. Phillips said seedsmen did not want to dispense drugs, but only to sell "patent" weed-killers or sheep-dips.—Mr. Munday observed that the applicants traded in close proximity to chemists.—The Mayor (Mr. A. E. Spender) said he understood the practice had been to send the order on to some manufacturer, but now the Act said they had to apply for a licence. Plymouth was largely an agricultural centre, and it seemed only natural that farmers should resort to seedsmen for their requirements.—Mr. Cornish said to his knowledge seedsmen had often retailed the preparations without the label "Poison."—Mr. Page appealed for "free trade" in this matter.—Mr. Lucas remarked that if the applicants were debarred from selling substances they had been selling for years it would not be "fair trade."—Mr. Sayers stated that it would make no difference either way, as tradesmen would still go on supplying their customers through the manufacturers.—The committee's recommendation was carried by twenty-three votes against twenty-one.

Pontefract.—Caleb England, ironmonger, Market Place.

Southampton.—The County Council has granted the application of Messrs. Epps & Co., nurserymen, Ringwood.

Applications Refused.

Blackburn.—The Town Council confirmed on August 5 the recommendation of the committee to refuse an application from a local seedsman (*C. & D.*, July 31).

Southampton.—The County Council has refused nine out of ten applications (see Applications granted).

Suffolk.—Thos. Smith, Bungay. At the meeting of the East Suffolk Council on August 10 a letter of protest was read from Mr. Herbert Gower, chemist and druggist, Bungay.—Dr. Crowfoot said the applicant was not a seedsman in the true acceptance of the word. He stocked seeds and bulbs, but was also a tobacconist. There was a chemist in business about 100 yards away.

Taunton.—The Town Council had three applications before them for a second time on August 4.—The matter had previously been referred back (*C. & D.*, May 22), and the Town Council again received deputations.—The applicants' advocate argued that there was no more danger in the sale of a sealed bottle of poison by an ordinary tradesman than by a chemist.—Messrs. W. A. Wrenn, A. J. Smith, G. W. Short, W. H. Maunder, S. B. White, and J. Boyd, chemists, opposed in person the applications.—Mr. A. J. White said it was not a question whether the applicants could handle sheep-dips or weed-killers better than the chemist, but if the nine chemists in Taunton were enough to satisfy the public needs.—Mr. Wrenn stated that it was a common error to suppose that chemists had a monopoly of the sale of poisons. As a matter of fact, the majority of them could be obtained wholesale without let or hindrance and without requiring the chemist's services. The Act was to allow licences to be issued in remote country districts where the chemist was non-existent, or there was a lack of facilities. In the business in which he was associated a preparation of the character under discussion had been sold in Taunton and district for many years but the profit on the whole year's supply did not amount to 5*l.*—Mr. Short and Mr. Maunder also contended that the local needs were already met.—Mr. Watson, a seedsman, asked if the chemists stocked insecticides, etc.—Mr. Wrenn: Yes, sold it by the cask.—Mr. Smith: And I've bought it by the hundredweight.—Mr. Wrenn said a bottle of the preparation shown by Mr. Watson had been sold to a boy by a nurseryman within a few miles of Taunton. The boy's mother, knowing it would kill insects, applied some to her children's heads, and nearly killed the children as well.—Mr. Watson wished to examine the chemists as to whether the preparation he showed should be used in greenhouses, vineries, or ferneries.—Mr. Wrenn rose to reply, but various councillors had apparently had enough discussion.—The applications were refused by twelve votes to six.

Births.

Brickell.—At 295 High Road, Brondesbury, London, N.W., on August 5, the wife of E. R. Brickell, chemist and druggist, of a daughter.

Davies.—At 16 West Street, Havant, on August 5, the wife of C. Sidney Davies, chemist and druggist, of a daughter.

Martin.—On July 29, the wife of J. W. Martin, pharmacist, Brockenhurst, Hants, of a son.

Marriages.

Charnley—Hodgson.—At Clayton Street Wesleyan Chapel, Blackburn, on August 9, by the Rev. H. J. McCullagh, B.A., assisted by the Rev. H. G. Sobey, Arthur Walker Charnley, chemist and druggist, 25 Princess Street, Bury, youngest son of Mr. John Charnley, Blackburn, to Lily, third daughter of the late Mr. James Hodgson, Sale.

Hall—Willey.—At Doncaster, on August 2, G. F. Stacey Hall, only son of Mr. H. Stacey Hall, chemist and druggist, Hull, to Edith, youngest daughter of Mrs. Willey, 43 Nether Hall Road, Doncaster.

Millar—Forbes.—At Knockbain Schoolhouse, Munlochy, on August 5, by the Rev. J. McLeod, U.F. Church, Munlochy, assisted by the Rev. John Dow, the parish minister, and the Rev. K. Cameron, U.F. Church, Avoch, Alexander Hastie Millar, chemist and druggist, Bervie, to Flora Annie, eldest daughter of Mr. John Forbes, schoolmaster.

Milne—McNaughton.—At 6 North Ellen Street, Dundee, on August 4, by the Rev. H. G. Watt, D.D., James Robertson Milne, pharmacist, to Susan Calder, daughter of Mr. Wm. McNaughton.

Murphy—Kiely.—At the Convent Chapel, Mitchelstown, on July 27, by the Rev. M. Ellard, C.C., assisted by the Rev. F. Flannery, C.C.; the Rev. W. O'Brien, C.C., Buttevant; the Rev. J. Casey, Guernsey; and the Rev. M. Staunton, St. Paul's, U.S.A., William Murphy, pharmaceutical chemist, The Pharmacy, Mitchelstown, second son of Mr. Michael A. Murphy, Lower Cork Street, to Kit C., second daughter of Mr. Thomas Kiely, Baldwin Street.

Thomson—Betts.—At 53 Great Northern Road, Aberdeen, on August 11, by the Rev. W. Cruickshank, Wm. J. Thomson, pharmacist, Worcester, to Josephine Catherine Fraser, only surviving daughter of Mr. and Mrs. T. Betts, Inverurie, N.B., late of the Chinese Imperial Maritime Customs.

Wilson—Allan.—At St. John's Episcopal Church, Alloa, on August 3, by the Rev. David Moir, M.A., Frederick William Wilson, chemist and druggist, third son of the late Mr. James B. Wilson, dental surgeon, and Mrs. Wilson, 20 Gilmore Place, Edinburgh, to Charlotte Mawhall, second daughter of Mr. John Allan, merchant, Alloa.

Deaths.

Andrews.—At the Whitby Hospital, on August 8, Mr. Charles Masters Andrews, pharmacist, 34 Leicester Terrace, Lancaster Gate, London, W., aged thirty-three. Mr. Andrews met his death while on his holiday, as the result of an accident sustained on Bank Holiday near Robin Hood's Bay, between Scarborough and Whitby. The accident occurred owing to the skidding of his bicycle near the foot of a steep hill. His right forearm was fractured, and was twice reset under anæsthetics, but blood-poisoning supervened, and the arm had to be amputated, with the result that death occurred on the day following the major operation. Mr. Andrews served his apprenticeship with Messrs. Batchelor & Son, Fareham, and was afterwards an assistant with Messrs. Vines & Froom, Aldersgate Street, London, E.C. He succeeded to the business of the late Mr. F. Andrews, to whom, however, he was not related.

Davies.—At the Grand Hotel, Swansea, on August 4, Mr. D. Hughes Davies, 11 Alban Square, Aberayron, Cardiganshire, from apoplexy, aged forty-four years. Mr. Hughes' sudden death necessitated an inquest, at which a verdict of death from natural causes was returned. He was a representative of Messrs. Jas. Boulton & Co., Ltd., Stratford, and formerly represented Messrs. Evans Sons Lescher & Webb, Ltd., in South Wales, and subsequently in India and South Africa.

Ekin.—At Fieldhead, Surbiton, S.W., on August 4, Mr. Charles Ekin, F.I.C., F.G.S., F.C.S., pharmaceutical chemist, aged sixty-eight. Mr. Ekin was a permanent director of Messrs. Savory & Moore, Ltd., 143 New Bond Street, London, W. He was apprenticed with Messrs. Argles & Stonham, Maidstone, and afterwards became an assistant with Messrs. John Bell & Co., Oxford Street, London, W. He passed the Major examination in 1861, and the next year went into business at Bath. In 1880 he left Bath and became a partner in the firm of Williams Bros., aniline-dye manufacturers, Hounslow, London. This partnership was dissolved in 1883, when he joined Mr. A. L. Savory in the business of Savory & Moore. When this business was turned into a limited company, in 1902, Mr. Ekin became a permanent director along with Mr. Savory. Mr. Ekin was one of the earliest members of the British Pharmaceutical Conference, and was Treasurer of that body from 1877 to 1884, when he was made a Vice-President. This position he resigned in 1886. From 1880 to 1884 Mr. Ekin was an examiner of the Pharmaceutical Society of Great Britain, and had in 1875 delivered the inaugural address to the students of the School of Pharmacy. He was elected in 1895 a member of the committee of pharmacists appointed by the Pharmaceutical Society, on the suggestion of Sir Richard Quain, to assist the British Pharmacopœia Revision Committee, but he resigned that position after a short time as a protest against views taken by the majority of the committee. This was his last active association with public pharmaceutical bodies. Mr. Ekin was a clever chemist, and many years ago called attention to the fact that tellurium as an impurity of bismuth salts is the cause of the garlic-like odour which some samples of bismuth salts communicated to the patient's breath. He had also special analytical processes for foods, milk, and potable waters, publishing a booklet on the subject of drinking-water in 1880. Mr. Ekin had been in failing health for the last two years, and had been confined to his bed for about nine months. He was a man of strong character, and was much liked by all his staff and associates. His body was cremated at Woking on August 9, among those present being his son, Mr. Charles Ekin, solicitor, Birmingham, and Mr. A. L. Savory. He leaves also two daughters.

Gore.—At 6 Charlemont Road, Clontarf, Mr. Richard James Gore, registered druggist, proprietor of the Moore Street Drug-hall, Dublin, aged thirty-six. He was the eldest son of the late Mr. R. Letham Gore, pharmaceutical chemist, Lower Camden Street, Dublin.

Gostling.—At Linden House, Diss, on August 4, Mr. Thomas Preston Gostling, pharmaceutical chemist, aged eighty. Mr. Gostling was formerly the senior partner of Gostling & Co., who have an extensive business at Diss, the supply of agricultural requirements bulking largely. He retired some years ago. Mr. Gostling is known to pharmacists chiefly from the fact that he served a long term as a member of the Council of the Pharmaceutical Society. He was elected in 1877, and it is interesting to note his views expressed at that time:

> He advocates a thorough practical examination for the Minor and a high theoretical and practical qualification for the Major. He would contend for the privileges of the dispensers based on their efficiency; and he deplores the existing practice of medical men supplying as well as dispensing medicine in the country. He would support any well-considered measure for suppressing the encroachment of the co-operative stores.

Mr. Gostling was for two years Vice-President of the Society, but in 1892 he did not seek re-election. He became a pharmaceutical chemist in 1853. Locally he rendered useful service as a member of the School Board, Board of Health, Framlingham Estate Trust, and other public bodies. The funeral took place on August 9.

Legal Reports.

Pharmacy Act, 1868.

Section 15 Case.

At the Liverpool County Court on August 12, before Judge Shand, Mrs. Stephenson, wife of Mr. Stephen Stephenson, pharmaceutical chemist, 98 Kensington, Liverpool, was charged with selling poison, contrary to Section 15 of the Pharmacy Act, 1868. For the prosecution Arthur Foulds said that on April 29 he visited the branch shop and found Mr. Stephenson in charge. From there he went by tram direct to the head business, and was served by Mrs. Stephenson with a bottle of glycerin and a bottle of Winslow's Soothing-syrup. On two subsequent occasions he found Mrs. Stephenson at the head shop, and Mr. Stephenson at the branch business. Mr. Stephenson admitted the sale, but contended that it took place under his direct supervision. Mrs. Stephenson handed the Winslow's syrup to her husband, who wrapped it up, and she handed it over to Foulds. Mr. Stephenson cycled from one shop to the other. The Judge inflicted a fine of 5*l.* and costs, remarking that the evidence of Mr. and Mrs. Stephenson could not be reconciled.

Merchandise-marks Act.

Beecham's Pills.

At Belfast Summons Court on August 6, Mr. Joseph Beecham, trading as Thomas Beecham, St. Helens, summoned J. Croskery, Rathdrum Street, Belfast, for applying a false trade description—Beecham's pills—to certain goods. Mr. McCutcheon, for the prosecution, said that there were two summonses—one for applying a false trade-description and the other for selling the goods with a false description applied to them. Mr. Joseph Beecham carried on business at St. Helens, Lancashire, as the manufacturer of "Beecham's pills," which have acquired a world-wide celebrity, and upon which an enormous sum of money had been expended in bringing the pills before the notice of the public. The prosecution was instituted for the purpose of preventing people coming in and endeavouring to reap the results of the vendor's enterprise and expenditure. He alleged that in that case an attempt had been made to pass off on the public as Beecham's pills an article which was not of the manufacture of Mr. Beecham. It was because the defendant is in a small way of business that the proceedings were taken in that court, otherwise they would have been taken to the Court of Chancery. If any appeal for leniency is made on the ground that defendant is in a small way of business, he would remind his Worship that it is poor people who have been defrauded. Beecham's pills are usually sold in boxes, and are worth, according to the proprietors, "a guinea a box." For some time the pills have been sent in large packages to Messrs. Johnston Bros., Waring Street, the local agents, who sell them to firms in the city, and these firms in turn distribute them to small grocers and others.

Mr. Tughan (for the defence) submitted that the whole question turned upon the intention to cheat and defraud. Mr. McCutcheon then called Mr. Henry Phythian, who proved the purchase of the pills in a small square envelope. Mr. Edward Glover, from Thomas Beecham, St. Helens, said he tested the pills and found they were not Beecham's. This was not a chemical test, but by appearance, taste, and smell. Mr. William Moss, also from St. Helens, said that with the exception of Mr. Beecham he is the only person who knows the exact composition of Beecham's pills. The four pills, received in a sealed envelope, were not made by Beechams. He could tell by appearance that they were not Beecham's pills. The pills are usually sold in boxes, but are also sold to the agents in Ireland in sealed packets, each containing twenty-four envelopes with four pills in each envelope. The envelopes are not fastened down. In cross-examination witness said that many formulæ have been published alleged to give the composition of Beecham's pills, but never one from which the genuine pills could be made. Mr. Robert Johnston, of Johnston Bros., said his firm are agents in Ireland for Beecham's pills. A large amount of the trade is done in the sale of the pills in boxes, but in order to meet the needs of the poorer class of customers the pills are supplied to his firm in packets, and sold by the wholesale firms in small quantities. Thirteen months ago the system of giving out the pills with empty envelopes was stopped. The envelopes are left open to prevent dampness. Beecham's name is on the envelope. Detective-Sergeant Costello, acting on a warrant, searched defendant's premises and saw Mrs. Rogers, defendant's daughter. She handed him twenty-one pills and a number of empty envelopes. There was a card in the shop with the wording "Beecham's pills may be obtained here; four a penny." Mrs. Rogers said a man who called at the shop sold her the pills. Mr. Tughan submitted that the name must be registered as a trade-mark before the case could succeed. If any fraud had been perpetrated, it had been done innocently by his client, who had acted honestly in the transaction. She offered to give the name and address of the man from whom the pills were bought. Mr. McCutcheon: As a matter of fact, the words "Beecham's pills" are registered as a trade-mark, but I am not proceeding under the Trade-marks Act. Mrs. Rogers was then called as a witness and said she bought the pills at 1*s.* 2*d.* for half an ounce from a traveller, and believed she was buying Beecham's pills. She had bought pills from the man about twelve times. His Worship said defendant had not made inquiries as to whether it was Beecham's pills that were being bought. A fine of 2*s.* 6*d.*, and 20*s.* costs, was then imposed.

A case against Wm. Kidd, Primitive Street, was adjourned for seven days.

Sale of Food and Drugs Acts.

Cream of Tartar.

At the Enniscrone (co. Sligo) Petty Sessions, Michael Rafter was summoned for selling cream of tartar containing 42 per cent. of foreign matter. Defendant said he bought it from a merchant in Ballina, but had no guarantee. A fine of 5*s.* was imposed.

Deed of Arrangement.

Sanders, William Josiah, trading as Carter & Co. and Carter's Drug-stores, 75 Westow Hill, and residing at 12 Essex Grove, Central Hill, Upper Norwood, Chemist and Druggist. Trustee, W. D. Goatly, 110 Cannon Street, London, E.C. Dated July 28; filed August 3. Liabilities unsecured, 816*l.*: estimated net assets, 240*l.* Among the creditors are: Ingram & Royle (18*l.*); Currie, Thompson & Co. (13*l.*); Evans Sons Lescher & Webb Ltd. (19*l.*); Sutton & Co. (80*l.*); Melanoca, Ltd. (18*l.*); Idris & Co., Ltd. (16*l.*); T. H. Lloyd & Co., Leicester (12*l.*).

New Companies and Company News.

The letters P.C. mean Private Company within the meaning of the Companies Act, 1907, and R.O., Registered Office.

Antineurasthin Co., Ltd. (P.C.).—Capital 10,000*l.*, in 1*l.* shares. Objects: To acquire the business carried on by the "Antineurasthin Co.," to adopt an agreement with W. Migge, and to carry on the business of manufacturers, chemists, dealers in proprietary articles, foods, patent medicines, chemical preparations, etc. The subscribers are: G. H. B. Dalman, 19 Reighton Road, Upper Clapton, N.E., accountant, and E. B. Fox, 5 Fielding Terrace, Ealing Common, W., secretary. The provisional directors are G. H. B. Dalman and E. B. Fox. R.O., 18 Eastcheap, London, E.C.

Black Sea Oil Fields, Ltd.—Capital 300,000*l.*, in 1*l.* shares (160,000 participating preference). Objects: To acquire oil-bearing lands in Russia, in particular to acquire 270 acres of oil-bearing properties in and near Markop, in the province of the Kuban Government, from the M.K.P. Syndicate, Ltd., and to carry on the business of producers, importers, exporters, manufacturers, and refiners of and dealers in oils and petroleum spirit, etc. The first directors are W. W. Rutherford, M.P., J.P., O. Krishaber, J. S. Harmood-Banner, M.P., D.L., and G. Tweedy. R.O., 56 Moorgate Street, London, E.C.

Central Roumanian Petroleum Co., Ltd.—Capital 150,000*l.*, in 1*l.* shares. Objects: To acquire (*inter alia*) the rights of

C. R. P. Syndicate, Ltd., over 280 acres of petroleum properties in the Prahova District of Roumania, and to carry on the business of produeers, importers, manufaeturers, and refiners of and dealers in oils and petroleum spirit and the produets thereof, etc. The first directors are W. W. Rutherford, M.P., J.P. (chairman), F. W. Brandreth, J. E. Platt, W. H. Plewman, J. H. Renton, de la Hey Moores, and G. Tweedy (managing director). R.O., 32 Gt. St. Helens, London, E.C.

United Alkali Co., Ltd.—The directors have declared a dividend at the rate of 7 per eent. per annum on the preference shares for the half-year to June 30.

The Dental Mechanics' and Operators' Association of Scotland, Ltd., Glasgow.—This company is being wound up voluntarily, and Mr. Matthew Gilmour, jun., chartered accountant, 75 St. George's Plaee, Glasgow, has been appointed liquidator.

British Dyewood and Chemical Co. Ltd.—The annual general meeting of this company was held at Glasgow on August 10, Mr. Thomas McArly presiding. An extraordinary general meeting was afterwards held, and a resolution to reduce the capital by writing down the ordinary shares from 10*l.* eaeh to 10*s.* eaeh was adopted.

Mortgages and Charges.—The following particulars have been filed at Somerset House: *J. Munro & Co., Ltd.* A memorandum has been filed of satisfaction in full of debentures securing 200*l.*—*Knowles Oxygen Co., Ltd.* Mortgage to secure 3,000*l.*—*Perry's Powders, Ltd.* Outstanding mortgages and charges on July 1, 1908, 290*l.*—*J. Wells Wood, Ltd.* Particulars of 1,000*l.* debentures, all issued.—*Wray, Sanderson & Co., Ltd.* Mortgage to secure 8,000*l.*, charged on Isis Oil Mills, Morley Street, Hull. Also debenture charged on plant, tools, etc.

Personalities.

Mr. Charles Corning Weld, for many years associated with Messrs. Burroughs Wellcome & Co., has resigned his position to accept an appointment in the management of Messrs. Raimes, Clark & Co., of Edinburgh.

Norman Millard, the thirteen-year old son of Mr. E. J. Millard, F.C.S., F.R.M.S., of Messrs. C. J. Hewlett & Son, Ltd., has passed in the Honours division of the second class of the College of Preceptors' examination.

Mr. Samuel Judd Lewis, B.Sc.Lond., F.I.C., Ph.C., 122 Newington Causeway, London, S.E., has just had conferred upon him the Ph.D. degree of the University of Tubingen. The subject of his dissertation was "Studien uber Elementare Zirkonium."

We mentioned recently that Mr. John Gardener had completed fifty years' service with Messrs. Howards & Sons, Ltd., Stratford, London, E. It is interesting to add that Messrs. Howards, in recognition of his services, have presented Mr. Gardener with a silver tea-and-coffee service.

Mr. George Arthur Shaw, pharmaceutical chemist, and Mr. Edward Hardcastle, pharmaceutical chemist, have been appointed directors of the firm of Kay Bros., Ltd. At the same time a number of the old employés of the firm have received allotments of shares with contingencies in the case of death for their widows.

Dr. Ludwig Mond visited Winnington, Northwich, Cheshire, this week. He has not been there for five years, and on the day of his arrival the township was decorated with bunting, and archways spanned the entrance to Winnington Park. Several thousand employés of Messrs. Brunner, Mond & Co.'s chemical-works lined the drive.

Mr. Henry S. Wellcome has presented a set of sleeve-links to Mr. Robert Clay Sudlow, formerly general manager and now treasurer of Messrs. Burroughs Wellcome & Co., as a souvenir to mark the completion of thirty years' service with the firm. The links consist of flat nuggets of gold, each encrusted with diamonds set in the form of XXX.

Councillor F. G. Foster, pharmacist, who was a member of the deputation which presented an address of welcome to Portsmouth to the Czar of Russia, has been decorated with the Order of Chevalier of St. Stanislaus. Mr. Foster was also the recipient, on August 10, of a silver casket containing an illuminated vellum recording the Council's vote of thanks in recognition of his services to the borough of Portsmouth during his recent Mayoralty.

Westminster Wisdom.

A Record of Parliamentary Progress.

The Anæsthetics Bill.

Possibly owing to the fact that the Anæsthetics Bill of Dr. G. J. Cooper has not yet been formally withdrawn from the Order Paper, notices of opposition to the second-reading stage continue to be handed in at the table.

Restraint of Trades (Shops) Bill.

This Bill, which was introduced a short time ago in the House of Commons by Mr. J. A. Seddon, after the inclusion of commercial travellers had been definitely agreed upon, has now been abandoned for the Session. Efforts will be made next year to obtain a favourable place in the ballot so that it may again be proceeded with.

The Medicinal-wine Question.

Sir Clement Hill, among a number of other members, has asked the Chancellor of the Exchequer whether he can see his way to exempt spirits used for medicinal purposes only from the extra duty proposed under the Finance Bill, and Mr. Lloyd George has, in a written reply to the hon. member, stated that he must refer him to the reply which he gave on June 16 to Mr. Crooks (see *C. & D.*, June 19, p. 944). [This reply shows that the Chancellor of the Exchequer has not changed the attitude he took up seven weeks ago.]

Isle of Wight Analyst.

In the House of Commons to-day (Thursday) Mr. Godfrey Baring asked the President of the Local Government Board whether, having regard to the passage in the report of Dr. Buchanan on the work in relation to the Sale of Food and Drugs Acts contained in a supplement to the 37th Annual Report of the Board, 1907-8, he would be prepared to sanction the appointment of Mr. E. W. Pollard, of Ryde, as public analyst for the administrative county of the Isle of Wight, and, if not, would he state the objections to the confirmation of such appointment.

Noxious Weeds.

Mr. Arnold Herbert asked the representative of the Board of Agriculture in the House of Commons on August 10 whether the English Board possessed any powers for the eradication of noxious weeds similar to those which it was proposed to confer upon the Board of Agriculture in Ireland by the Weeds and Agricultural Seeds Bill, and, if not, whether the Board would consider the desirability of extending the provisions of that Bill to England and Wales.—Sir Edward Strachey, in a written reply to the hon. member, says the Board have no such powers as those mentioned. The Bill in question has been drafted to meet the special conditions of agriculture in Ireland, and it could not be extended to England and Wales without considerable modifications.

Dangerous Hairwashes.

Sir William Collins, one of the few members of the medical profession in the present House of Commons, asked the Home Secretary on Thursday whether he is aware of the extensive use of carbon tetrachloride as a hairwash; whether his attention had been called to a recent death of a young lady while her hair was being shampooed with this compound; whether his attention had been directed to the poisonous properties of carbon tetrachloride; whether any restrictions upon the sale or use of this compound at present existed; and whether he proposed to take any steps in the matter.

In conversation with our Parliamentary representative, Sir William Collins stated that the death which formed the subject of his question was not the first that had occurred owing to the use of this particular article as a hairwash. He was informed that tons of it were sold in this country, and it did not seem to be generally known that the preparation in question is twice as poisonous as chloroform. As to restrictive measures he did not see what could be done, unless it was dealt with under the Poisons and Pharmacy Act of last Session.

Reviews.

Arbeiten aus dem Pharmazeutischen Institut der Universität Berlin. [*Investigations Conducted in the Pharmaceutical Institute of the University of Berlin.*] Issued by Dr. H. Thoms, Professor and Director of the Institute. Vol. vi., with four illustrations in the text. 8vo. Pp. 304. (Berlin, 1909 : Urban & Schwarzenberg.)

The contents of this volume reflect the scientific activity of the Pharmaceutical Institute of the University of Berlin during the year 1908. In a brief introduction the Director gives some information of general interest pertaining to the Institute. It is seen from this that the number of students attending the lectures on pharmaceutical chemistry was 141 in the summer semester and 143 in the winter semester, while those receiving practical laboratory instruction during the same period numbered 171 and 180 respectively. Smaller classes were also conducted in the more specialised subjects of the chemistry of foods and toxicological chemistry. These statistics would thus alone appear to afford evidence of the flourishing condition of the Institute, and of an appreciative recognition on the part of students of the excellent facilities which it affords for the acquisition of pharmaceutical knowledge.

The investigations conducted in the various departments of the Institute are classified in the present volume under the following sectional headings :

1. Examination of medicinal preparations, specialities, and secret remedies.
2. Investigations in organic chemistry.
3. Examination of foods and beverages.
4. Examination of technical materials and products from the Colonies.
5. Apparatus.
6. Lectures and judicial reports.

Although the larger part of the work included under these divisions has already been published in various chemical and pharmaceutical periodicals, and therefore need not be considered in detail, its presentation in a collective form renders it readily available for reference, and this is also facilitated by a complete index. These annual volumes are, moreover, an exposition of professional and scientific activity which might profitably be emulated by institutions of a similar character in other lands, and in this respect they should exert a most beneficial and stimulating influence.

In concluding the brief notice of this publication, the hope may be expressed that the interesting and important work which is being conducted by Professor Thoms and his associates at the Berlin Institute may long be continued, and that the earnest efforts which are there put forth for the advancement of pharmaceutical science may be attended in some commensurate degree with the recognition and appreciation which they merit. F. B. P.

Grundriss der Pharmakochemie. [*Outlines of Pharmacochemistry.*] By Dr. O. A. Oesterle, Professor in the University of Berne. 8vo. Pp. xi. + 562. (Berlin, 1909 : Gebrüder Borntträger.)

This work, the appearance of which has previously been briefly noticed (*C. & D.*, April 24, p. 640), is devoted to a consideration of the chemical characters of the constituents of drugs, but is stated to have been restricted in its scope to those drugs whose constituents have been more or less completely studied with respect to their chemical constitution. It is intended to serve as a supplement to the text-books of pharmacognosy, in which, for practical reasons, detailed information of the character here presented cannot be included, and thereby to facilitate the study of such groups of organic compounds as are otherwise only more fully described in chemical text-books, in original monographs, or in the periodical literature.

In the arrangement of the material an attempt has been made to classify the drugs in groups with respect to their characteristic constituents, although it is recognised that the complexity of the latter frequently renders such a plan a more or less arbitrary one, and that certain drugs may with equal propriety be included in various groups. The resins and balsams have not been separately considered, inasmuch as these have been made the subject of a special treatise by Professor Tschirch ("Die Harze und die Harzbehälter," 2nd edition, Berlin, 1906), although some of their better-known constituents are incidentally noticed in connection with other subjects. It was also evidently not the intention of the author to include otherwise all drugs which contain substances of known chemical constitution, as such a plan would have considerably augmented the size of the volume. There is, however, one omission to which attention may here be directed, as it may be deemed worthy of consideration in a future revision of the work. In connection, for example, with the subject of hesperitin (p. 226) it would appear to be of interest to note that an isomeric substance, designated *homoeriodictyol*, $C_{16}H_{14}O_6$, is the chief constituent of the *Eriodictyon* of the U.S. Pharmacopœia. The constitution of *homoeriodictyol* has, moreover, not only been completely established, but in connection therewith it has been indicated that the structure of hesperitin is slightly different from that hitherto assigned to it ("Journ. Chem. Soc.," 1907, p. 887).

With regard to the contents of the work under consideration, the following division of the subject-matter has been adopted :

Drugs containing alkaloids.

Drugs having odorous constituents, such as the essential oils.

Drugs containing glucosides.

Drugs which contain or yield colouring-matters.

Drugs containing tannic or gallic acid, or related substances.

The substances which have received detailed consideration under the above divisions are numerous, and, for the most part, may be regarded as instructive examples of the class of compounds which they represent. In a perusal of the work it has, however, been observed that consideration has been given to some products which have heretofore been assigned distinctive names, but are now known not to represent definite chemical compounds. This applies, for example, to the so-called "myristicol" (p. 362), of which not only a description is given, but also the two alternative and purely hypothetical structural formulæ which were suggested many years ago by Brühl. It has been shown, however, by a more recent investigation, cited in a footnote, that the fraction of nutmeg oil corresponding to the so-called "myristicol" consists of a mixture of alcohols, of which terpineol is the chief constituent ("Journ. Chem. Soc.," 1907, p. 2037). The so-called "ericolin" (p. 420), a brown, amorphous resin, is also evidently a mixture, to which no chemical formula can properly be assigned, and its assumed product of hydrolysis, "ericinol," is equally indefinite in character (compare Kanger, "Chem. Zeit.," 1903, p. 794, and Power and Tutin, "Proc. Amer. Pharm. Assoc.," 1906, p. 352). "Laurocerasin," which was formerly considered to be an amorphous form of amygdalin, is recorded (p. 446) as a constituent of cherry-laurel leaves ; but it is now known that this amorphous product is a very indefinite mixture, the cyanogenetic constituent of which is the β glucoside of racemic mandelonitrile, which has been designated "prulaurasin." In the footnote on p. 189, relating to linalool, there is a slight error, since the reference to Bertram and Wallach ("Journ. f. Prakt. Chem." [2], 45, 590) should read Bertram and Walbaum.

The above observations are here only recorded in order that they may receive consideration in a future revision, and are not in any sense to be regarded as detracting from the general excellence and value of the work.

The motive by which Professor Oesterle has been guided in the production of this work merits the highest commendation, for there can be no doubt as to the desirability of including in a course of pharmaceutical instruction some information concerning the chemical characters of the constituents of vegetable drugs, especially when these constituents represent the principles upon which the medicinal uses or activity of the drug depend. The author may furthermore be congratulated on the accomplishment of a task which has evidently involved a very large amount of patient and painstaking labour, and for the presentation of a difficult subject in so attractive a form. F. B. P.

China Root.—The exports from Hankow in 1908 were 22,859 lb., valued at 34,222*l.*, against 1,990,400 lb., valued at 26,199*l.*, in the previous year.

Observations and Reflections.

By "Xrayser."

The Valour of the Pharmaceutical Council is fortunately effectively controlled by its discretion, but the valour has an uncomfortable habit of bounding forward sometimes before the discretion gets started. Two prominent instances of this tendency to unwise impulsiveness are furnished in the report of the last Council-meeting. First it appears that the protest against the additional spirit-duty proposed by the Chancellor of the Exchequer, so far as it affected spirituous medicines, has fizzled out in rather undignified fashion. There would have been no discredit in the failure of the effort to deviate this tax from its incidence on remedies, for it was recognised from the first that the difficulty of differentiating between medicines and beverages must be considerable, even with the best will of all parties concerned; and obviously the forces against us were overwhelmingly strong. But to plan a "scheme," impress the Chancellor with its merits, discuss it with the Board of Inland Revenue, and then abandon it because there was found to be no evidence "of anything like a universal agitation on the part of their members for a reduction in the duty," compels a doubt of the truly representative character of this chartered body. A little later

Counsel's Opinion on the urgent demand made last month for a judicial ruling in regard to the granting of licences to sell certain poisons under the new Act was "read." A month previously it was unanimously and enthusiastically agreed that it was imperative "to do something," and presumably counsel were hired to advise what that something should be. We are not told what the advice was, but it is not very hazardous to guess in view of the proposal which followed the reading. It cannot be supposed that, if a judicial ruling were pending, anyone would have suggested as an addition that the amiable but fragile promises of Ministers in a hurry should be rubbed into the Government. On the other hand, it may be surmised that the blanket provided by learned counsel must have been a soaking wet one to have so completely damped off the ardour of our bellicose champions of July that only one among them had the heart to support this tempting but vain piece of satisfaction. Twice in one month is rather frequent for the Council to emulate that King of France, who marched his twenty thousand men up the hill, and, having surveyed the landscape, marched them down again.

The British Pharmaceutical Conference had the happy experience of finding itself with 5*l.* 14*s.* 3*d.* in hand this year, after being 39*l.* deficient twelve months ago. It looks like seeing its fiftieth birthday yet, and it may be hoped its financial health will go on improving! But, unless the Executive Committee think the time has arrived for associational suicide, they will have no hesitation in declining the modest proposal of their still more decrepit relative, the Federation, to keep above ground a little longer by mounting on their shoulders. The gallant effort of the Federation to maintain its existence in an unappreciative world compels our admiration; but the argument that one association would keep the other standing if they leaned on each other is a poor one. There ought to be sufficient interest left in pharmaceutical science to keep the B.P.C. going; if there is not, let that body dissolve itself. It ought not to have to depend on side-shows. A carefully planned excursion into the field of pharmaceutical politics might be permitted as a dissipation once a year, but if that experiment should be repeated the committee should take care to choose a subject on which chemists may be expected to hold different opinions, and to provide that opposite views shall be efficiently represented.

Two Thousand Pounds is the figure at which Mr. Woolcock and his Parliamentary Pharmaceutical Representation Committee are aiming as the price of two seats, one on each side of the House of Commons, from which pharmaceutical light shall emanate. That is to say, 2,000*l.* is to be the price of trying for them, and even if they are both won it is not now proposed, I understand, to further subsidise the occupants, though that expense is invariably reckoned upon in corresponding cases when other classes are specially represented. It was a misapprehension of that condition that led me to assume that the cost of a won-seat would be higher than that of a lost election. I believe an annual allowance was at one time contemplated, but however this may be, it is evident that the arrangements are somewhat plastic. The earliest subscriptions were contributed to a fund proposed by Mr. Glyn-Jones at the Pharmaceutical Society's annual meeting in May 1908 "to contest the proposed pharmaceutical legislation hostile to the legitimate interests of chemists and druggists." The hostile legislation was subsequently approved of by the promoters of the fund, and apparently the cash in hand was looked upon as a useful nucleus for this other object. No doubt the diversion was made with the consent of the subscribers. Such as it is, however, it is rather a hindrance than a help to Mr. Woolcock in his present task. Experienced wire-pullers know that a fund of 2,000*l.*, or even of 1,000*l.*, must be started with bigger sums than guineas. The magnificence of the chorus is likely to be proportionate to the importance of the solos.

The Small Shopkeepers who were reported to have voted by such large majorities in favour of the scheme whereby Sir John Lubbock proposed to make it possible to reduce the hours of miserable competition seemed curiously to disappear when the boon which it was understood they so earnestly prayed for came within their reach. The Home Secretary is probably wise, therefore, in not attempting to limit, except occasionally, the hours during which shops may be kept open; but so far as his plan is effective in ensuring the reduction of working-hours in shops where assistants are employed, to that extent it is likely actually to encourage the peddling competition which Sir John Lubbock tried to curb. Compulsory legislation which tends to protect the weaker classes against the stronger is not now regarded with the sentimental horror which it once excited; but it is not certain that this measure will benefit enough of the victims of long hours to make it worth the machinery which will be required to enforce it. Mr. Gladstone said it would affect the daily lives of a million assistants and half a million shopowners. That is presumably a rough estimate of the numbers of the classes named in the Kingdom. But a very large majority of that one and a half million will not be affected at all. They do not now work sixty hours a week, exclusive of the now general voluntary half-holiday and of meal-times. Still, the measure may be needed for the benefit of the more unfortunate residue, who perhaps cannot raise themselves to the same level. I do not think chemists' assistants ought to be classed in this residue, because their position is strong enough in these days to enable them to take their own part.

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Editorial Comments.

Educational Progress.

The publication of the Educational Number of The Chemist and Druggist gives us an opportunity of surveying the changes that have taken place or are foreshadowed in that section of the world of education which is specially of interest to our readers. The coming into force of the Poisons and Pharmacy Act has bettered the position of the qualified man, and has already led to an increase in the demand for assistants who have received the hall-mark of qualification. Other changes will result from the passing of this Act. Section 4 gives the Pharmaceutical Society new powers in regard to examinations. These are (1) to require evidence of apprenticeship from persons entering for the qualifying examination, (2) to institute a compulsory curriculum, (3) to divide the qualifying examination into two parts, (4) to establish pharmaceutical reciprocity with the Colonies, and (5) to register (if the Council so decide) qualified military dispensers and apothecaries' assistants. Most of those who enter for the pharmaceutical examinations have served an apprenticeship to the drug-trade, but the declaration which has to be signed does not specially require apprenticeship—the candidate states that he has been for three years engaged in the dispensing of physicians' prescriptions. A period of three years between the passing of the Preliminary and entering for the Minor is another object of Section 4 of the Poisons and Pharmacy Act. The other points are in regard to the institution of a curriculum of study and the division of the Minor examination into two parts with an interval of at least six months between them. The curriculum requirement will probably be defined in regard to the number and duration of lectures which the candidate will need to attend, and these courses will doubtless be required to be taken at certain approved educational institutions. The manner in which the Minor will be divided is probably in the direction of making the first section a written examination in botany, theoretical chemistry, pharmacy, and prescriptions; and the second part an oral and practical examination in botany, chemistry, dispensing, and materia medica. These changes cannot, however, take place for some time, probably not till 1915. A special committee has been appointed to frame the curriculum and changes in the by-laws and examination regulations. This will, perhaps, require two years before the by-laws can be placed before the members of the Society for approval. Following precedent, the by-laws would respect the rights of apprentices in pharmacy at the time the alterations were approved, and a period of three years would, no doubt, be allowed before the new by-laws were enforced. It will thus be seen that the present generation of apprentices have not much to fear from altered conditions which must eventually be introduced. The matters of reciprocity and the recognition of qualified military dispensers and apothecaries' assistants are matters which will also have to be taken up by the Pharmaceutical Society. Already representations have been made by Colonial Pharmacy Boards, the War Office, and the Society of

Apothecaries in the interests of those immediately concerned. It may be repeated that the clause in the Poisons and Pharmacy Act is permissive, and that the Pharmaceutical Society are bound to require that the standard of qualification from dispensers certified by other bodies is at least equal to that demanded of those who pass the Minor examination. If there are any students who believe that they will get registered as chemists and druggists by passing the Apothecaries' Assistants' examination as at present constituted, we assure them that they are leaning on a broken reed. The rights of chemists and druggists demand that the standard which has been and is required of Minor candidates shall not be lowered to persons holding certificates of other bodies. The only way in which the question can be approached seems to be by the institution of a lower grade of poison-sellers corresponding to the registered druggists across the Irish Channel. Such a change could probably only be brought about by an amending Act of Parliament, and it might be a generation before the question was finally settled. The progress of education is evidenced by the constitution of the Imperial College of Science and Technology, which, being brought about by the Government, may be taken to express the national desire. In Ireland the new National University seems destined to put new life into the higher education of the country. The old Queen's Colleges of Belfast, Cork, and Galway become constituents of the new University, the headquarters of which are in Dublin. Bristol has within the last few months received a Charter constituting a University in the place of the College, which has for years been of such signal service to education.

One step which we consider to be retrograde must be mentioned in the interests of students who are debarred from adequately expressing their views on the subject. We refer to the illiberal policy which the Pharmaceutical Society has adopted in regard to certificates of qualification issued to those who now pass the Minor examination. We hope that steps will be taken to remedy what we consider to be a *faux pas*. Those who pass the Minor are entitled to the fullest credit, and, if any alteration were made in the certificate, it should have been in the direction of giving the certificate more importance instead of degrading it as has undoubtedly been done. We appeal to the Council of the Pharmaceutical Society, many of the members of which must still have recollections of the strenuous work needed to pass the qualifying examination, to see that justice is done to the young men who pass the very severe Minor examination of the present day. Give them a certificate which they will be proud of and which the councillors will not be ashamed of having inaugurated.

Chemists' Assistants Hours.

The Shops Bill which the Home Secretary introduced last week in the House of Commons is not to be carried any further during the ensuing Session. We gave last week (p. 267) an indication of the scope of the Bill. Clause 1 specifies that a shop-assistant shall not, save as otherwise provided by this Act, be employed about the business of a shop—

(*a*) For more than sixty hours (exclusive of meal times) in any week; or

(*b*) after eight o'clock in the evening or more than three days in any week.

Clause 2 refers to overtime; one sub-clause providing that an assistant may not work after eight o'clock in the evening on more than three days in the week. Sub-clause (*b*) given above will, in regard to chemists' assistants, be non-operative, as shown by Clause 23 of the Bill, which is as follows:

(1) Where the sale of medicines or medical or surgical appliances is carried on in any shop, so much of Part I. of this Act as prohibits the employment of a person after eight o'clock in the evening on more than three days in the week shall not apply as respects shop assistants employed for the purposes of such sale.

(2) Nothing in this Act shall prevent customers being served with medicines or medical or surgical appliances on any week day after the hour at which the shop in which they are sold is required to be closed by or under Part II. of this Act, or on Sunday, or shall prevent a shop assistant so serving customers notwithstanding that he may be employed for the purpose contrary to the provisions of Part I. of this Act.

We may add that Part II. of the Bill makes early closing on one day of the week compulsory, and every shop must be closed for the serving of customers on Sunday (with exceptions in the case of neighbourhoods inhabited mainly by Jews and certain London street markets held on Sunday mornings). It follows, then, that, although shop-assistants may not be employed for more than sixty hours in any week, customers will still be able to obtain "medicines or medical or surgical appliances" after eight o'clock and on Sunday. There are provisions made regarding overtime employment which permit of an assistant being employed overtime on not more than thirty days in a year and for not more than two hours on any day.

Oversea Trade in July.

The expansion shown in the Board of Trade Returns for June is more than maintained by the figures just issued for July, especially as regards British exports, which show a marked increase. June was the first month this year to show an advance in exports, and the slight gain then announced has now developed into one of 1,782,000*l.*, or 5.2 per cent., while the imports register an improvement of 3,548,000*l.*, or 7.6 per cent. There is, however, considerable leeway to make up, as the total exports for the seven months to date are still 11,278,000*l.* less than in 1908. On the other hand, the imports covering the same period are 6,900,000*l.* more. The July figures are as follows:

	1909	1908	1907
Imports	£50,316,600	+£3,547,600	−£1,891,200
British exports...	35,487,000	+ 1,781,000	− 4,965,000
Re-exports ...	7 374,000	+ 1,063,300	− 14,000
	£93 177 600	£6,392,400	£6,870,200

The 3½ millions improvement in imports is divided among food, drink, and tobacco (1,872,000*l.*), raw materials (1,128,000*l.*), and manufactured goods (489,800*l.*). Practically the largest gain in raw materials refers to "oil seeds, nuts, oils, fats, and gums," which are up by 609,170*l.*, the total amounting to 3,103,000*l.* Much larger imports of petroleum, turpentine, tallow, and stearine make up the bulk of this improvement. The activity in indiarubber is clearly seen in a rise of from 412,400*l.* to 945,500*l.* in value, and although quantities advanced from 31,000 cwt. to 52,600 cwt., values are conspicuously higher. The importance of the caoutchouc industry is gauged by imports approximating 7,228,000*l.* so far this year. In the manufactured-goods section a feature of direct interest is a gain of 101,700*l.* in imports of chemicals, drugs, etc., the figures attaining 931,600*l.* for the month. Painters' colours and pigments show the largest gain, after which come unenumerated chemicals, drugs, and medicines. Soda compounds have diminished for the past three years, and this tendency also applies to bleaching-materials, boron compounds, cream of tartar, synthetic indigo, myrabolans and valonia. July was a fairly active month for quinine imports, which have been as follows:

	1907	1908	1909
July	134,246oz.	214,576oz.	309,674oz.
January-July ...	1,662,607oz.	594,488oz.	1,442,990oz.

The Peruvian bark figures also show a slight improvement in quantity and value both on the month and on the expired portion of the year.

Turning to exports, the principal feature to be noted is undoubtedly the increased purchases on behalf of the United States. Almost all the advance last month (1,800,000*l.*) was in manufactured goods, and out of the seventeen scheduled items there are only two declines—viz., machinery and new ships, the latter being a very variable item—thus indicating the widespread character of the export improvement. The chemical and drug figures are very satisfactory, rising from 1,251,000*l.* to 1,373,300*l.*, or 122,300*l.* more; but on the seven months there is a slight shrinkage of 256,000*l.* None of this deficiency, however, directly applies to the exports of drugs and medicines, the figures under this heading showing a gain of 14,463*l.* for July and one of 69,746*l.* for the seven months—the totals being 159,300*l.* and 971,839*l.* respectively. These figures clearly indicate that the export drug-trade at least is having a fair share of the revival in business, and this also applies, with few exceptions (notably copper sulphate), to the heavier chemicals. Tariff questions having now been settled both in the United States and Germany, there seems no reason why the general recovery in overseas trade should not make further strides in the autumn.

The White Cross Congress.

The second International Congress for the repression of adulteration in food, chemical-products, drugs, essential oils, aromatic substances, mineral-waters, etc., is to be held in Paris from October 17 to 24. Mr. Loudon M. Douglas, 3 Lauder Road, Edinburgh, the General Correspondent in the United Kingdom, has sent us the programme of the Congress, from which it is obvious that many of the subjects are of importance to pharmacists. The third section deals with crude drugs, essential oils, and chemical-products, but so far only preparatory work has been done. At first glance it appears that it would be superfluous to lay down any fixed rules concerning these special materials, as most drugs and chemical-products are already defined by official Pharmacopœias. The divergences which exist, however, are so numerous that they form an argument in favour of international discussion. The general plan agreed upon is :

A. To determine the special features defining the unadulterated and marketable product by indicating :

1. Impurities of foreign matter which may be found in it, and the presence of which is contingent upon the manner of production, and to establish as near as possible their maximum quantity.

2. Impurities or accidental substances which are not detrimental and the presence of which could not be considered as a fraudulent addition.

3. Substances which on account of their appearance or certain characteristic features in common, might fraudulently be added or substituted.

4. Noxious substances, the presence of which has been detected, or which, from any cause whatever, may be found in the product.

B. To establish a definition, accompanied by description, of all physical or chemical characteristics by which the identity of the product to be studied may be fixed in as complete a way as possible.

In regard to crude drugs, the Commission state that the action of many medicinal plants essentially varies according to external biological conditions, such as nature of the soil, position of the ground, and condition of cultivation. The line is drawn between natural deficiency and impurity and intentional adulteration—a point of view which is not inconsistent with therapeutic usage, inasmuch as pharmaceutical preparations from active plants must be accurately standardised to meet the requirements of most pharmacopœias. A list of sixty-one drugs is given, and the definitions suggested for ipecacuanha-root, jaborandi-leaves, senna-leaves, senna-pods, tolu balsam, and opium. In the notes on chemicals it is stated that the Commission has determined the characteristics of purity for each product, and has accepted the characters "which are as near to absolute purity as can be realised in practice." The definitions proposed for acetic acid, tartaric acid, glycerin, potassium iodide, and bismuth subnitrate are given in the programme. We note that tartaric acid "must be devoid of arsenic, oxalic acid, etc.," and that it "may accidentally contain metallic lead, but its filtered 10-per-cent. solution in water should not be perceptibly precipitated by sulphuretted hydrogen." These notes indicate that the recommendations of the Commission are still in the general stage; more difficulties arise when the attempt is made to define the tests and methods of applying them.

Work at the Imperial Institute.

The annual report of the Imperial Institute for 1908, which has just been issued, contains brief allusions to some of the more important work which has been undertaken by the Scientific and Technical Department during the year. No fewer than 375 investigations and inquiries were requested by the Colonies and India, the number of reports furnished being 393, while 141 investigations were in progress at the close of the year. Cotton, tobacco, minerals, and rubber were the chief articles investigated. In view of the great European demand for West African palm oil an investigation has commenced at the Imperial Institute in co-operation with the Agricultural Departments of the Colonies, with a view to finding a suitable method for the better preparation of the oil from the fruits, the natives who manufacture palm oil still employing primitive and wasteful methods. In recent years there has been an increased demand for vegetable oils and fats suitable for the manufacture of butter-substitutes, and this has led the Institute to investigate a large number of new and little-known oil-seeds, which were afterwards submitted to technical trials by manufacturers. An investigation is also being conducted for the Indian Government in connection with the utilisation of cottonseed oil for similar purposes. The economic resources of the Seychelles have continued to receive considerable attention, especially in connection with vanilla, essential oils, and tanning-materials, a summary of which has been given from time to time in these columns. Much work has been accomplished in minerals, including an examination of Ceylon "concentrates" containing thorianite and monazite; while from Newfoundland certain kinds of kelp were found to be unusually rich in potassium salts and in iodine. Further consignments have been asked for, with a view to ascertaining its commercial possibilities. In the drug department sixteen samples were received and investigated, but none appear to be of important commercial interest. Two samples of "Muziga" from the East Africa Protectorate, identified at Kew as the product of *Warburgia ugandensis* were received, and found to contain mannitol (about 3 per cent.), tannin, and a pungent resin soluble in ether. From Sierra Leone *Ageratum conyzoides* ("Crawcraw") was examined and found to contain a minute quantity of a crystalline alkaloid, to which the physiological activity of the drug is thought to be due. Samples of the stem, leaves, and decoction of the "Kiki" plant from the Straits Settlements, which has been recommended as an anti-opium remedy, were examined, but nothing was detected which was likely to be physiologically active. During the year considerable progress was made with the

investigation of Indian species of *Aconitum*, *Hyoscyamus*, *Datura*, and *Strychnos*, but these inquiries are not yet completed, and among other drugs and poisonous plants under investigation are included Tonga bark and root from Fiji, wild kola from Southern Nigeria, and various native drugs from the West African Colonies. Among the resins examined were several samples of copal, elemi, dammar, and colophony, numbering sixteen altogether. A copal from a new district in the Gold Coast proved to be of very good quality, and, after cleaning and grading, was valued at 70*s.* per cwt. Samples of elemi-like resins received from Nigeria and Uganda proved to be similar to Manila in composition, but were not so clean or well-prepared. India and Fiji dammar was tried by a firm of crêpe-manufacturers as a substitute for shellac, but proved unsuitable. In addition to the foregoing, thirteen samples of "gums" were received, but of those obtained from British Colonies only one from Northern Nigeria and two from the Gold Coast were of a saleable type. The Nigerian gum was from *Acacia Caffra* and was very similar to Senegal gum. Investigations in regard to spices mainly related to vanilla, cinnamon-bark, and ginger. In regard to cinnamon, investigations show that although the bark is roughly prepared and only suitable for manufacturing-purposes, it gives a fairly satisfactory yield of cinnamon oil of good quality, and suggestions for the better preparation of the bark have been made. It may be recollected that a small parcel of Seychelles cinnamon oil was offered at the London drug-auctions some months ago, when 1*s.* 6*d.* per oz. was wanted for it. During the year assistance has been continuously afforded to producers of Sierra Leone ginger in valuing and disposing of their produce in London. It is interesting to note that a very complete series of "grass oils" has been received from Ceylon and is at present under investigation, and among the samples of lemongrass oil were some from Uganda and Bermuda, the citral-content of which was extremely low and the oil almost useless for commercial purposes. Origanum oil (containing 80 per cent. carvacrol) is being sold on the London market by the Cyprus Government, and it has been ascertained that better prices would be obtained if it were rectified so as to remain colourless. For this purpose a modern rectifying-still is being specially constructed in London for shipment to Cyprus. Pure carvacrol is also likely to be manufactured on a commercial scale by the Cyprus Government, they having already sold a small trial consignment to a London house. Other essential oils under investigation include Cyprus laurel oil of excellent quality and Fijian bay oil. The foregoing investigations may be said to represent some of the least important work of the Imperial Institute, that devoted to staples like cotton, rubber, and tobacco being of much greater value and importance.

Failures in 1908.

The annual report of the Inspector-General in Bankruptcy for 1908 shows that the number of receiving orders and administration orders made was 4,306, an increase of 195. The liabilities amounted to 5,509,949*l.* and the assets (as estimated by debtors) to 2,103,492*l.*, with an estimated loss to creditors of 4,808,785*l.* The number of deeds of arrangement was 3,822, the liabilities being 5,858,447*l.*, assets (as estimated by debtors) being 3,545,373*l.*, with an estimated loss to creditors of 3,731,233*l.* There was an increase of 195 in the number of bankruptcies and one of 334 in the number of deeds of arrangement—the latter increase, it will be seen, being more marked than that of bankruptcies. In spite of the increase in the number of cases there was a decrease in the estimated amount of liabilities and loss to creditors in bankruptcies, but this decrease was more than counterbalanced by the increased liabilities and loss under deeds. Taking both classes together, with an increase of 529 in the total number of failures, the estimated loss to creditors was only 151,464*l.* more than in 1907. The decrease in the magnitude of failures due to speculative enterprise is very marked, the liabilities being little more than one-third of those for the same class in 1907. Turning to the detailed statistics of insolvency in the various trades and professions, it may be noted that "chemists and druggists" have fared worse than in the previous year, the number having risen from fifty-five to sixty-three, with total liabilities of 56,899*l.*, which is less by 1,929*l.* than the 1907 figures. "Doctors of medicine, surgeons, etc.," would appear, on the other hand, to have enjoyed increased prosperity, the number of insolvencies having diminished by five to twenty-five, with total liabilities of 31,712*l.*, these figures showing a substantial decrease of 18,575*l.* The number of receiving orders and administration orders made on behalf of "chemists and druggists" was twenty-three only, as compared with twenty-six in the previous year; and, curiously, twenty-three "doctors of medicine, surgeons, etc.," appear under this heading, being the same as in 1907. Taking the bankruptcy figures as a whole, they appear to show that the severe depression which prevailed in 1908 was not productive of so large a number of failures as might have been expected.

Essential-oil Adulteration.

The adulteration of essential oils has for some time engaged the attention of men who have not scrupled to prostitute scientific knowledge in "faking" essential oils. These dishonest practices have been exposed from time to time in our columns. The newest adulterant that is being employed is a crude terpinolene. This substance has physical properties which render it particularly useful for the fabrication of essential oils. The warning which Mr. J. C. Umney gives should set chemists on their guard, as if chemical examination alone is relied on the oil might be passed as genuine. There is also a good deal of adulteration being practised in the matter of otto of rose, a note by Mr. E. J. Parry being a useful reminder that the examination of samples of otto should be thorough if the scientific fraud is to be unmasked.

Defining Spirits.

The final report of the Royal Commission on Whisky and other Potable Spirits has been presented to both Houses of Parliament this week. It will be remembered that the appointment of the Commission was made in consequence of summonses under the Sale of Food and Drugs Act at the North London Police Court in 1905. The cases referred to show that great differences of opinion were held as regards what should be taken as standards for potable spirits. It can hardly be said that the conclusions of the Royal Commission have helped matters much. Here, for instance, is the definition produced for whisky:

> Whisky is a spirit obtained by distillation from a mash of cereal grains saccharified by the diastase of malt; Scotch whisky is whisky as above defined distilled in Scotland, and Irish whisky is whisky as above defined distilled in Ireland.

The conclusions regarding brandy are that the term "brandy" is applicable to a potable spirit manufactured from fermented grape-juice, and from no other materials. Rum is "a spirit distilled direct from sugar-cane products in sugar-cane growing countries." Gin is agreed to be a distilled spirit, flavoured with juniper and other herbs. The Commissioners conclude that it is impossible, with our present limited knowledge of the composition and properties of the secondary constituents of potable spirits to establish trustworthy chemical standards for controlling the description of potable spirits, but they are satisfied that "chemical analysis is capable of affording very important assistance in many, if not all, cases of suspected misdescription, when the results of analysis are taken in conjunction with other evidence such as that of the expert taster and Excise records, when obtainable, and when a common practice as regards method is employed."

Adulterated Otto of Rose.

By Ernest J. Parry, B.Sc., F.I.C.

FROM all accounts the adulteration of otto of rose is being carried on this year to a very great extent. The use of alcohol in small quantities to keep the specific gravity down, which was exposed last year, is not now being practised, as it is so easily detected. But there is no doubt that a good deal of scientific skill is being used in order to produce mixtures of geraniol and allied bodies with the same physical characters as genuine otto of rose. From the examination of numerous samples, I think that the determination of the amount of alcohols present in the oil, calculated as geraniol, is the most useful test to supplement the physical characters. Genuine otto of rose rarely contains as much as 75 per cent. of alcohols, calculated as geraniol, and any figure above this must be regarded as being suspicious. Five samples of otto of this season's distillation, all of which were sold as "guaranteed pure," have been all found to be adulterated, giving the following figures on analysis :

	1	2	3	4	5
Sp. gr. at 35° ...	0.862	0.860	0.861	0.864	0.8595
Refractive index at 25°	1.4649	1.4660	1.4652	1.4670	1.4642
Optical rotation	−2°	−2° 30′	−2° 30′	−2° 45′	−2° 20′
Ester-value ...	9	11	8	7.5	8.8
Total alcohols ...	73.5	79 %	81 %	82 %	80 %

There is no doubt that this valuable essential oil will require most careful watching this season.

Terpinolene:

A New Adulterant of Essential Oils.

By John C. Umney, F.C.S.

THE ingenuity of the sophisticator of essential oils is becoming greater and greater, and I think that an emphatic protest should be made against the preparation of adulterants by large manufacturers, who cannot possibly believe that the "out-of-the-way" bodies that they are preparing can be made with any other than an illicit object. Moreover, I am loth to believe that the interests of these big distillers of essential oils and manufacturers of chemical products would not be better served by adhering to such type of business as can, in the long run, be advantageous to them. After all, the output of such products can only be a temporary one, and seems to me to necessitate experimental work more costly than the probable ultimate gain.

It must be borne in mind that these particular bodies can only be manufactured with a view to deceiving the analytical chemist, and one cannot give better examples than those which have been discovered in our analytical laboratory. Take, for example, triacetin or glycerin acetate (*C. & D.*, lxii. p. 591). It had no commercial value, and so far as I know was not even an article of trade, until some ingenious person thought that it might serve as a useful adulterant for oil of peppermint, and possibly other essential oils—its physical and chemical characters making it somewhat difficult of detection. Another inventive manufacturer hit upon ethyl citrate (probably not in this country, as its cost would have been somewhat high) as a substitute obviously of the very greatest utility in increasing the ester-value of such oils as bergamot, lavender, etc., and with the former then at famine price a most useful adulterant (*C. & D.*, lix., p. 691).

The latest adulterant, to which I now wish specially to refer, is one that is finding a place in certain essential oils, notably spike lavender which fairly readily mask it. It is probable that analysts depending solely on chemical examination, and not being familiar with the various oils of spike lavender distilled in different parts of France, Spain, etc., might pass an oil as pure on its chemical characters alone, in which to the practised nose the presence of this adulterant is at once apparent. The first impression of the oil is that it is decidedly pungent and camphoraceous, suggesting the presence of large quantities of cineol and camphor. The last impression of the oil after it has remained on blotting-paper for some three or four hours is the odour of lilac, and it was this odour that suggested the probable presence of terpineol or some of the by-products in the manufacture of terpineol. Terpineol is found in small quantity in spike lavender oil, cineol being also present. The cost of terpineol led one to the idea that it would not be a very remunerative adulterant for an oil worth probably only half as much again as the terpineol itself, and on elaborating my experiments I was surprised to find that the body present is probably not terpineol but some of the by-products in the manufacture of terpineol, which, on making inquiry through Continental distillers, I found is offered under the name of terpinolene. Terpinolene itself is an optically inactive hydrocarbon, boiling at 185° to 190° C., and is formed from terpineol by the action of mineral acids. Commercial samples which I have examined vary in composition—that is to say, in the proportion of terpineol and terpenes present—and therefore also in their effects on the constitution of the sophisticated oil.

The odour of "terpinolene" becomes quite apparent on fractional distillation—the fractions boiling between 185° and 195° C. have an extremely pungent camphoraceous odour, and the nose alone is quite sufficient to identify the presence of something quite foreign to spike-lavender oil. The presence of a considerable proportion of terpineol naturally has the effect of putting up the alcohol-value of the essential oil.

Inquiries throughout the Continent confirm the view that this product, of the presence of which I am confident in the oils which I have examined, is being produced in large quantity and sold at 7*d.* per lb. It is therefore, a very useful adulterant, and one against which it behoves everyone interested in essential oils to be on his guard.

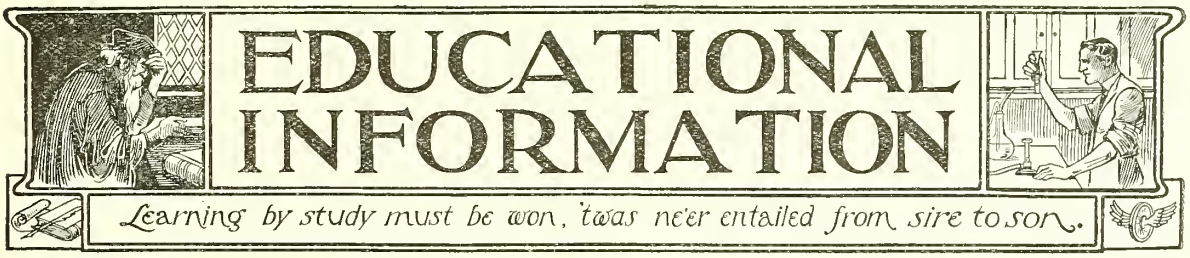
I sincerely hope that the emphatic protest herein contained will be supported by those who have at heart the interest of the essential-oil industry, and that weapons will not be put in the hands of the unscrupulous dealers to defeat the analyst who may be compelled to rely almost solely on chemical tests for determining the purity of essential oils, and who has not the opportunities of considerable experience in actually handling the various grades of the oil in which they may be employed as an adulterant.

Experimental Preparation of Spiritus Aetheris Nitrosi.

By Abel Scholar.

THE average student in pharmacy fights shy of the preparation of spiritus ætheris nitrosi, but that he may not be denied the pleasure or disappointed in that particular the following experimental method is suggested. The product leaves nothing to be desired from physical, chemical, or even legal and medical standards. Place into a 10-oz. bottle 50 c.c. of 90 per cent. alcohol. Add thereto gradually, owing to the rise of temperature, 5 c.c. of sulphuric acid (sp. gr. 1.843). When cool add 50 c.c. more alcohol to which has been added gradually 7.5 c.c. of nitric acid (sp. gr. 1.42), and, lastly, 50 c.c. more alcohol. Lightly cork the bottle and leave overnight. Then distil the liquid, using a saucepan containing warm water, a flask with a side tube containing 5 grams of copper turnings, and fitted with a thermometer in the usual way, the flask being attached to an efficient condenser. The 135 c.c. of distillate represents the finished product. The temperature of the flask, with ordinary care, does not rise higher than 77° to 78° C. The action is uniformly moderate, and there is not the least evaporation of the more volatile constituent. The distillate is received in a 200 c.c. graduated cylinder plugged with a ball of cotton.

Drugs for Egypt.—The Egyptian "Journal Officiel" of July 26 announces that tenders will be received at the Central Administration, Department of Public Health, Cairo, until September 1, for the supply of drugs, medicines, articles for wound-dressing, etc., necessary for the Central Stores during the year 1910.



Introductory.

Mr. Hooper Tolbort, an apprentice to Mr. Froud, Dorchester, has, by a diligent employment of his leisure hours, placed himself *at the head of* 299 *candidates, Section A*, at the late Oxford Middle-class Examination. He also stands *second* only, in *Languages*. A greater amount of credit is due to Mr. Tolbort, from the fact that while he has earned for himself this enviable position, he is, we are told, diligent in his attention to business. In the hope that his example may stimulate others, we subjoin the Preliminary Examination required of all Candidates. 1. Analysis of English Sentences and Parsing, and Correction of Faulty Sentences. 2. A Short English Composition. 3. Arithmetic. 4. Geography. 5. The Outlines of English History. Subjects selected by the Candidate himself: A1. English History and Literature, from the Accession of James I. to the Death of Anne. A2. Shakespeare's King John, and Burke's Reflections on the French Revolution. A3. Outlines of Political Economy and English Law. A4. Physical, Political, and Commercial Geography.—B1. Latin.—B2. Greek.—B3. French.—*C. & D.*, September 15, 1859.

THE first number of The Chemist and Druggist contained on p. 6 the embryo which grew year by year until the September issue in each year was full enough of educational information to warrant the title "Educational Number" being applied to the whole. Changes in the pharmaceutical collegiate year have since pushed the number forward by a month. Looking back now on the first number we find the above-quoted paragraph, and it recalled the meeting of the Pharmaceutical Society on October 2, 1861, when Mr. Peter Squire, the President, intimated the results of the first Bell Scholarship examination. He told that there had been no candidates for the Senior scholarship, but nine competitors for the Junior, who were examined in the subjects of general education, as also in elementary chemistry, botany, and materia medica. The examination lasted two days, that of the first day being a written one, that of the second *viva voce*. The examiners had spoken in the highest terms of the answers of all the candidates, those of the first two especially being so meritorious that in the absence of any competitor for the Senior scholarship two Junior scholarships had been awarded by the Council as follows :

1. Thomas W. H. Tolbort, registered apprentice, residing with Mr. Froud, chemist, Dorchester.
2. William A. Tilden, registered apprentice, residing with Mr. Allchin, pharmaceutical chemist, Barnsbury Road, Islington.

We know nothing more about the remarkable young man Tolbort, but it is worth rescuing from oblivion the name of the first person to be awarded the first Bell Scholarship, especially as the runner-up on that occasion has since become a famous man of science as William Augustus Tilden, F.R.S., and the injunction of 1859 is appropriate to this the first Educational Number of our second half-century. It was :

> On the younger branches of the trade the future status will much depend; and by doing all they can to improve their education, by taking advantage of such opportunities of improvement as present themselves, they will not only benefit themselves, but assist in raising the status of the body to which they belong.—*C. & D.*, September 15, 1859.

Pharmacy is not considered to be one of the learned professions, but it is closely allied to them—so closely that some of the "learning" required for the one serves for the other. This is particularly true of the primary or entrance conditions. For all the professions there is at least one commonly recognised standard of

Elementary Education

which serves for all—for pharmacy, medicine, dentistry, veterinary surgery, and applied science, including professional chemistry. Consequently there is no longer difficulty in knowing how boys or girls should be educated in preparation for the learning of a profession; they must be prepared to pass an examination in English, mathematics, Latin, a modern language, and (in some cases) a science subject. Latin is indispensable for medicine, pharmacy, and dentistry, but not for the other professions which are dealt with here. Commonly recognised standards of learning are the Entrance examinations of the Universities, and of these the most popular is the Matriculation examination of the University of London. The Cambridge and Oxford Universities do not recognise it, but it is of such a standard as to be practically an Open Sesame to the curricula for professional qualifications. Moreover, any person, irrespective of colour or creed, is admitted to it at the age of sixteen years, and it is held simultaneously thrice yearly in centres throughout the British Empire, so that a boy in the Colonies who wants to get an English certificate in pharmacy, diploma in medicine, or degree in science can take the first step without leaving home—viz., pass the Matric. Five subjects must be passed at one time : that is the hard bit. All candidates must pass in English and elementary mathematics, in Latin (for pharmacy, medicine, or dentistry) or one of four alternative subjects (mechanics, physics, chemistry, or botany), and in two other subjects out of twenty-five (one of which must be a language if Latin has not been taken). Here are two typical selections :

London Matric.

Medical.	*Science.*
1. English.	1. English.
2. Elementary mathematics.	2. Elementary mathematics.
3. Latin.	3. German.
4. French.	4. Elementary mechanics.
5. Elementary chemistry.	5. Elementary chemistry.

The standard of knowledge required in each subject is high—in fact, the examination is both "stiff" and "tricky"; but boys and girls of sixteen have comparatively little difficulty in getting through it, when their last year or two at school has been spent in Matric. studies. We do not go into detail regarding it, as students can obtain free by post from the Principal, University of London, South Kensington, London, S.W., a copy of the "Regulations for Matriculation" in which full particulars are given. The examination is held in January, June, and September, and it is necessary to enter for it and pay the fee (2*l.*) six weeks beforehand. There is no rule without exceptions. We have said that Latin must be taken by medical and dental students : that is the General Medical Council's rule, but the London University breaks it by admitting to its medical degrees persons who have passed the Matric. without Latin. The conditions of matriculating at other English Universities are similar to those of London as regards Birmingham, Durham (including Newcastle-on-Tyne), Leeds, Liverpool, Manchester, and Sheffield. Durham has an examination of its own, held in March and September, five subjects being prescribed, all of which must be passed at one time. A typical five are English history, Latin, French, additional mathematics, and a science. The fee for the examination (held in Durham and Newcastle) is 1*l.* 10*s.*, and applications have to be addressed to the Rev. H. Ellershaw, University Offices, North Bailey, Durham. The Birmingham Univer-

Other English Universities.

sity's Matriculation examination is held in June and September, the subjects being English (language, literature, and history), Latin, mathematics, a foreign language, and chemistry or experimental mechanics. For particulars address Mr. Geo. H. Morley, The University, Birmingham. The Universities of Leeds, Liverpool, Manchester, and Sheffield have a Matriculation examination in common, which is held at each of the cities in July and September, the subjects being English (language or literature) and English history, mathematics, Latin, and two of the following subjects, one of which must be a language: Greek, French, German, some other modern language approved by the Board, elementary mechanics or physics, chemistry, geography, and natural history. The examination fee is 2*l*. Candidates must pass in six subjects at one time. Medical students must take both Latin and either Greek or a modern language. Write to the Registrar of any of the Universities for syllabus. The Entrance examinations for Cambridge and Oxford differ in character from the foregoing, and include Greek, it being requisite that all going forward to the degrees of either of these Universities should first reside in one of the Colleges and take the B.A. degree.

Scots Universities.

The Universities of Aberdeen, Edinburgh, Glasgow, and St. Andrews have, like Leeds, etc., a Preliminary examination in common which is conducted at the cities in March and September by a Conjoint Board, fee 10*s*. 6*d*. The subjects are English, Latin, elementary mathematics, and Greek or French or German. The mathematics paper for students proceeding to science degrees is higher than that given to those going forward to medicine. Candidates are permitted to take the subjects at two sittings of the examination.

Wales.

The University of Wales holds its Matriculation examination for entrance to the arts and science degree courses at Aberystwyth, Bangor, and Cardiff in July and September. Three compulsory subjects (Latin, English, and mathematics) are required, while two are optional (Greek, Welsh, French, German; dynamics, experimental mechanics and heat; chemistry, botany). Candidates who pass in four subjects may be permitted to take the fifth at a subsequent examination. The fee is 2*l*. The medical preliminary is that laid down by the General Medical Council. Many University or Education Board certificates are accepted in lieu of the Matriculation examination. Particulars from the Registrar of the constituent Universities: Mr. J. Mortimer Green, Aberystwyth; Mr. John E. Lloyd, M.A., Bangor; and Mr. J. Austin Jenkins, B.A., Cardiff.

Ireland.

The regulations for matriculating at the newly constituted National University of Ireland have not yet been formulated. The Matriculation examination of the Royal University of Ireland, which will probably be held for the last time this year, may possibly be the basis. Candidates, who must be over sixteen years old, are examined at the principal centres in Ireland during the autumn, the fee being 1*l*. The following subjects are required: Latin, one out of nine prescribed languages, English language (literature), and mathematics and natural philosophy. Further particulars can be obtained on application from the secretaries of the constituent colleges.

College Preliminary Exams.

As already mentioned, persons who have matriculated at a British University have, as a general rule, accomplished the first step on the way to professional qualifications. Even in the case of pharmacy students Matriculation is an advantage, for a few every year change their minds about pharmacy (even after passing the Minor or Major) and want to go in for medicine or a science degree; while in Scotland the assistance of the Carnegie Trust can only be obtained by students who matriculate and study at one of the Universities. The majority of pharmacy students and a large proportion of medical students and dental and veterinary students in England require something less arduous than a Matric. An Educational College examination is usually selected—*e.g.*, the Medical or Professional Preliminary examination of the College of Preceptors, which is in English (language and history), geography, arithmetic, algebra, Latin, and either Greek or a modern foreign language. The same subjects (except English history, geography, and Greek) are set for pharmaceutical students. The fee is 25*s*., and the examination is held in June and September in every important town of Great Britain. It is customary at many elementary schools for the pupils to be sent into the College examinations, which are held at the ends of the terms, fee 10*s*. 6*d*., and the second-class certificate in the prescribed subjects is recognised by the Pharmaceutical Society of Great Britain, so that with a little forethought a boy or girl who intends to go into pharmacy can easily get through the Preliminary examination before leaving school. Full particulars regarding the subjects of examination, when and where they are held, and how to apply can be obtained on application to C. R. Hodgson, B.A., College of Preceptors, Bloomsbury Square, London, W.C. Ask for a copy of the regulations. A similar examination to the College of Preceptors' Professional is conducted by the Educational Institute of Scotland—secretaries, Mr. S. M. Murray, 34 North Bridge Street, Edinburgh, and Dr. Hugh Dickie, Henrietta Street, Govan. It is specially designed for dental, medical, pharmaceutical, and veterinary students, the subjects being as prescribed, and the examination is held in Dublin, Edinburgh, Glasgow, Liverpool, and London in January, April, July, and September; fee, 1*l*. Students in Wales who desire to pass a Preliminary examination to which their education is specially adapted should pass the Junior examination of the Central Welsh Board of Education which is designed for pupils of the Welsh county schools, the fee being 5*s*. Particulars can be obtained from the Clerk of the Board, Cardiff.

E.I.S.

Wales.

The Preliminary examination which affords entry to the higher Irish qualification, that of pharmaceutical chemist, is still held by the Pharmaceutical Society of Ireland, at 67 Lower Mount Street, Dublin, on the first Thursdays of January, April, July, and October. This examination must now be taken before beginning the four-years' apprenticeship to become a pharmaceutical chemist (unless commenced prior to January 1, 1907). The compulsory subjects are Latin, English, arithmetic, algebra, geometry, and elementary theoretical chemistry. One of the following optional subjects must also be taken: elementary physics and mechanics, the rudiments of botany, or a modern language. Certificates in accordance with the General Medical Council's requirements for the Preliminary are accepted, also the junior, middle, and senior grades of the Intermediate Education Board for Ireland, provided the necessary subjects are included. The fee is 2*l*., and particulars can be obtained from Mr. A. T. Ferrall, Registrar to the Society, 67 Lower Mount Street, Dublin. No Preliminary is required before entry for the Registered Druggists' examination.

Ireland.

We have purposely refrained from entering into minute detail regarding these examinations, because it is advisable that students should, after deciding upon the course they are to pursue, obtain the printed regulations of the examination which they choose. These will show the extent of knowledge expected, the authors prescribed, and so on. Those who have not the advantage of guidance by a tutor should also obtain a copy of the "Preliminary Examination Guide," published at the offices of The Chemist and Druggist, 42 Cannon Street, London, E.C., price 2*s*. 6*d*., post free 2*s*. 9*d*. This gives full particulars of the London Matriculation, College of Preceptors, Educational Institute of Scotland, and other examinations, with instructions as to preparation and notes on the subjects, copies of the most recent questions set at the examinations, answers to the papers, etc. It is a most helpful book to students of all the branches of knowledge and qualification dealt with here.

Guide to Examinations.

The examinations in the various branches of science with which we have to deal will be taken in the following order:

Pharmacy, p. 295
Medical, p. 301
Dentistry, p. 306
Veterinary science, p. 308
Science (including optics), p. 309

Pharmacy.

Pharmacy Laws are not uniform throughout the United Kingdom, but four different sets are in force, viz. :

In England, Wales, and Scotland (including Orkney and Shetland) the administration of the Acts is entrusted to the Pharmaceutical Society of Great Britain.

In Ireland the Pharmaceutical Society of that country sees to the proper enforcement of enactments regulating the practice of pharmacy and the sale of poisons.

Jersey, Guernsey, and the Channel Islands have Acts of their own. British and Irish certificates, and also the qualification of the *pharmacien* of France, are accepted.

The Isle of Man has conditions of its own, under which the British and Irish qualifications are recognised.

Although provisions are made in the Poisons and Pharmacy Act of last year for the Pharmaceutical Society of Great Britain to accept Colonial diplomas which they approve, the British and Irish Pharmaceutical Societies, qualifications and certificates are not interchangeable—*e.g.*, anyone holding the Minor or Major certificate of the Pharmaceutical Society of Great Britain may not legally practise as a "pharmaceutical chemist" in Ireland, while the holder of the pharmaceutical licence of the Irish Society cannot keep "open shop for the sale of poisons" in Great Britain. So that while reciprocity will be established almost undoubtedly with our Colonies, there is unfortunately as yet no sign of it nearer home.

GREAT BRITAIN.

Pharmaceutical education and examinations are to undergo considerable change in the near future. The Pharmaceutical Society is empowered under Section 4 (*c*) of the Poisons and Pharmacy Act, 1908, to make by-laws "providing for periods of time and course of study in connection with the qualifying examination, and dividing such examination into two parts," or, in other words, to introduce a compulsory curriculum and divide the Minor. Both provisions may have far-reaching effects on the examination and the expense incurred in training for it. The candidate entering for the Minor within the next few years will probably not be affected by the new conditions, as noted elsewhere (p. 288). However, the youth who enters on his apprenticeship at the present time may be affected by changes made in the conduct of the examination, for which a sharp look-out must be kept. No advice can be given on these points until the length of the curriculum (with the subjects included therein) and the recognised institutions are made known.

Registration as Apprentice or Student.

The conditions now in force require the candidate desirous of becoming a "chemist and druggist" to pass an approved Preliminary examination, to have been engaged in dispensing medical prescriptions (anywhere) for three years, and to pass the Minor examination of the Pharmaceutical Society. For particulars of Preliminary examinations see p. 293. Before entering for the Society's qualifying examination the prospective candidate must register as an "apprentice or student" by forwarding his preliminary certificate, with a fee of 2*l.* 2*s.*, to Mr. Richard Bremridge, Secretary and Registrar, 17 Bloomsbury Square, London, W.C. The official publication "Particulars of Examinations, Scholarships, and Prizes," which contains a list of recognised examinations, will be sent post free on written application to the Secretary. Registration as a student must be effected before the applicant is allowed to enter for the Minor examination, which means usually a lapse of three months between registration and entry for the Minor.

Apprenticeship and Training.

The conditions of apprenticeship vary somewhat. In England and Wales the apprentice is frequently indentured, and may reside with his employer, in which case a premium of 50*l.* or more is required. The system usually in vogue in Scotland, under which the apprentice is paid a small salary and lives with his parents or guardian, is becoming more common in England and Wales, and with this arrangement indentures are not customary.

Speaking generally the businesses in England and Wales can be divided into dispensing businesses and those in which few prescriptions are made up. The former class is better adapted for the systematic training of the apprentice for the qualifying examination, although frequent opportunity of gaining experience can be made in the latter category of businesses, which predominate at present. In many instances a youth is naturally apprenticed in a local pharmacy, but it is an advantage if, before entering upon his studies, he becomes an assistant in an opposite type of business, so as to gain wider views and knowledge on matters pharmaceutical. The art of salesmanship in particular depends upon varied experience in addition to the individual's natural capabilities.

Preparation for the Minor should commence on his first entry into the chemist's shop or dispensary. Even the liberal amount of bottle-dusting or utensil-washing usual in the primary stage has its lessons. During the unpacking of parcels the appearance of crude drugs, their fineness and colour in powder form, the colour and form of chemicals, the odour and appearance of galenicals should be noted. The British Pharmacopœia should be one of his first investments for home study, and although the apprentice may not have the opportunity for making all the preparations contained in its pages, it will be to the discredit of himself and his master if he does not make a fair proportion. Stock ointments, syrups, and other simple preparations are usually the youthful apprentice's introduction to the B.P., and in the subsequent compounding of tooth-powder, face-creams, and other proprietary specialities much can be learnt in making preparations "secundum artem." Any pharmaceutical preparation required in shop routine should be made if possible by the apprentice. His employer could in comparatively few instances refuse such a request upon the ground of expense or lack of material or appliances. Dispensing facilities are frequent in Scotland, where physicians prescribe rather than dispense, but in England practice in compounding is more difficult to obtain. Although the amount of experience gained in the professional side of pharmacy depends largely upon his master, a great deal also depends upon the industry and energy of the apprentice. Facilities for practice in dispensing are rarely refused by employers, and the indentured apprentice can legally insist upon such instruction.

The educational side should not be neglected during apprenticeship. Arrangements can usually be made to obtain afternoon or evening tuition at a local institution in chemistry, botany, and pharmaceutical subjects without interfering with business routine. The elementary (first) stages in inorganic chemistry and botany given for the Board of Education's examinations in almost every town of any size are suitable for the first year's work. In the second year instruction in elementary organic chemistry, with reading or classes in materia medica, may be added. The third year should be devoted particularly to pharmacy, especially in determining the reasons for the methods and processes, with which he should be conversant from a practical standpoint through his previous training. Deductive reasoning, using the brains, is preferable to books, which are for reference. Nevertheless the latter are for use, and to endeavour to memorise cumbersome formulæ for galenicals is misapplied energy. The Latin necessary for the Preliminary examination must be retained and every opportunity grasped for prescription-reading, paying special attention to posology. The prescription problems appearing in our columns, although more difficult than those usually met with, should fill some spare moments in a useful and interesting manner. The final labour of the Minor examination can be materially lightened by a judicious use of the facilities provided in the pharmacy or local institution, and the importance of study and dispensing practice during apprenticeship should not be underrated. The candidate expert in the essential operations in pharmacy courts success both during examination and in business.

The Minor or Qualifying Examination.

The examinee who successfully negotiates this examination is entitled to be registered as a "chemist and druggist," and to use the personal title of "pharmacist." The "apprentice or student" (see above) who desires to enter

for the examination must have attained the age of twenty-one years, as testified by a birth-certificate which accompanies the printed form of application (the latter is obtained from the Secretary and Registrar at the above address). A certified declaration must also be produced showing that the candidate has been engaged in the practical dispensing and translation of prescriptions during three years. Examinations are held quarterly in London and Edinburgh. The fee (10*l.* 10*s.*) is payable before the fifteenth day of March, June, September, or December, and the candidate must say whether he wishes to be examined in London or Edinburgh.

The examination is of two days' duration, comprising a practical and an oral portion on different days, with an interval of a few days between. Lunch-time (one hour) separates the subjects for the first day—dispensing and practical chemistry. A scrutiny of the "Minor Experiences" that appear from time to time in The Chemist and Druggist will give a good practical idea of the nature of this important part of the examination.

The candidate is called upon to appear for *viva voce* examination if he satisfies the examiner as to his abilities in the practical portion. This oral examination in botany, chemistry, materia medica, pharmacy, and prescription-reading occupies from two to three hours in the morning or afternoon. A short interval occurs between the subjects, during which the student awaits the next subject upon the dreaded "funking form." This wait is feared because the candidate may be stopped at any subject in which he fails to show sufficient knowledge. However, if the examinee is allowed to take them all, shortly after their completion he is informed of the result.

It is between the practical and oral portions of the examination that it is proposed to make a longer interval—possibly six months—and so "divide" the Minor. It is also suggested that the candidate who shows his competency in the first day's work should not be re-examined in practical work as he must be at present—a proposal which ought to be adopted in fairness to the candidate.

The unsuccessful candidate is allowed to enter for the next examination on payment of a fee of 3*l.* 3*s.* The following is a synopsis of the subjects for the qualifying examination:

Minor Examination Subjects.

Botany.—Classification, including sub-classes and natural orders, of angiosperms and recognition (fresh or dried) of forty-five specified medicinal plants. Morphology and anatomy of all parts of the plant, including recognition, by the microscope, of plant-structures. Elementary facts about the physiology of plants, including reproduction.

Chemistry and Physics. An elementary knowledge of physical laws (*e.g.*, conservation of energy, atmospheric pressure, and temperature); the characteristics of chemical action and the principles of chemistry; non-metals and their compounds, with knowledge of the usual impurities in those included in the British Pharmacopœia; metals, their oxides and salts, including their preparation, properties, and adulterations; carbon compounds, especially those used in medicine, and how to prepare and test them. Problems relating to weight and volume under different conditions of temperature and pressure. The practical examination includes the application of physical laws, as by determining specific gravities, recognition of chemicals by tests, qualitative analysis (two metals and two acid radicals), identification of alkaloids, etc., volumetric analysis of the B.P., assaying galenical preparations containing alkaloids, and a practical acquaintance with the methods of preparing the more important B.P. inorganic substances and certain specified organic compounds (*e.g.*, ether and chloroform).

Materia Medica. Recognition of B.P. and other specified drugs, telling their principal commercial varieties, sources, natural orders, and modes of collection and preparation for the market, some knowledge of their morphology and active constituents, and how the latter may be determined.

Pharmacy.—The examination in this subject deals with all the operations involved in preparing drugs for administration—*e.g.*, evaporation (extracts), distillation, sublimation, desiccation, disintegration of solid substances, solution (infusions, tinctures, etc.), filtration, and expression. The candidate must also know the principles involved in the dispensing of medicines, particularly as to pill-masses and emulsions. He is also required to show a general knowledge of the processes by which the official galenical preparations are made, and to have a knowledge of the proportion of active ingredient or crude material in official preparations of aconite and other potent medicines. He must know what are the scheduled poisons in Part I. and Part II., and the legal conditions necessary to be observed in dispensing, retailing, exporting, and wholesaling them; also the special conditions imposed on the sale of arsenic by the Arsenic Act.

Practical Pharmacy and Dispensing.—The candidate is required to make certain B.P. preparations, and to do everything required in compounding and dispensing physicians' prescriptions.

Prescriptions. The candidate is required to read and translate into English autograph prescriptions and know the grammatical construction of the Latin; to detect errors, discover unusual doses, and have a general knowledge of posology. Also to translate English prescriptions into Latin.

The complete syllabus may be obtained post free on application to the Secretary and Registrar of the Pharmaceutical Society, 17 Bloomsbury Square, London, W.C.

A Modified examination for persons who registered (as assistants) for the same on or before December 31, 1869, is held in the same subjects.

The Major Examination

is chiefly an extension of the Minor, and is only open to those who have passed that examination; fee, 3*l.* 3*s.* The fee for re-examination is 2*l.* 2*s.* The successful candidate is entitled to style himself "pharmaceutist" or "pharmaceutical chemist," but the value of these titles as distinctive from the Minor man is practically *nil*, now that the Minor man may use the title "pharmacist." The only advantage now accruing is the exemption from jury-service and the award of a diploma, but on the broader question much can be said from an educational point of view. The examinations are held now in April and July only in Edinburgh and London. Two days are devoted to written papers on chemistry and physics, botany, and materia medica. The papers in the two latter subjects usually include microscopical examination and identification. The practical examination in quantitative and qualitative chemistry covers a whole day. If the examiners consider it necessary, the candidate may be called upon to submit to an oral examination. The following is a synopsis of the

Major Examination Subjects.

Botany.—Candidates should have, in addition to what is required in the Minor examination, a thorough knowledge of classification, morphology, and physiology. They are required to make and mount microscopic preparations illustrating vegetable structure, and to apply micro-chemical tests for cellulose and cell products.

Chemistry and Physics.—Candidates may be taken more fully in the Minor subjects, and are expected to have a good knowledge of the constitution of matter, heat, light, magnetism, electricity, chemical theory, and the classification, characteristics, and constitution of the carbon compounds, particularly cyanogen derivatives, hydrocarbons, and paraffin and benzene derivatives. Special attention is paid to B.P. standardising processes. Practical work comprises the analysis of mixtures of three metallic salts; estimation of nitrogen in organic compounds; determination of melting and boiling points; gas-analysis by nitrometer; preparation of specified organic substances; recognition by chemical reactions and determination of the strength and purity of inorganic and organic compounds (including drugs and galenicals) by B.P. tests and assay-processes; the separation of alkaloids and glucosides, and detection of methyl alcohol in galenical preparations.

Materia Medica.—Candidates must know how to estimate the value of important drugs, and to distinguish commercial varieties and separate official active principles. They must also have a general acquaintance with the actual constituents of all important drugs, be able to discover adulterations, examine drugs microscopically, and to discover adulteration in powdered drugs by comparison with authentic material.

Degrees in pharmacy are now conferred by certain Universities upon registered chemists and druggists who take the curriculum and pass examinations (p. 300).

The Society of Apothecaries also grants certificates certifying to the ability of the holders to dispense for apothecaries (p. 300). In this regard it may be noted that the Pharmaceutical Society is empowered to make by-laws under which holders of this certificate and qualified military compounders may be registered as pharmaceutical chemists or chemists and druggists. However, the conditions, which are not yet formulated, will doubtless require certificates or evidence of training equivalent to the Society's examinations, so that the holders of such qualifications desirous of registration will save time by taking the Minor examination.

Pharmaceutical Education.

In the near future a course of instruction in a school or college will be a requirement before entering for the Minor, and there are few apprentices capable of passing the examination without other training than that obtained during apprenticeship. The length of this curriculum varies inversely with the amount of training obtained during apprenticeship. The Metropolis was for long the centre for institutions specially equipped for teaching pharmaceutical subjects, but the last ten years has seen a great increase in the facilities afforded in the provinces. The customary course of instruction at the proprietary schools covers the whole of the work in three months, but all of them have arrangements for a longer period. The ordinary course at

the Pharmaceutical Society's school extends over nine months.

Many students are prevented on account of expense from taking the longer course, and are willing to undergo a period of strenuous work. In such cases the student should, if possible, ascertain the subject of the lectures for the following day and read them overnight, thus allowing his powers of absorbing the instruction to be at a maximum. Short notes should be taken during the lecture and rewritten and amplified at night. Revision should occupy spare time. For the average individual three hours' real study on five nights a week will strain his capacity to the utmost if he does his day-work properly. More than this means a breakdown in health or ruined nerves. Brain-fag is often relieved by a change of subject, while as much fresh air and exercise as possible should be taken. Week-ends are particularly well spent in visiting museums or botanical gardens, or in field botany.

The following brief notes give the outlines of the courses available at the various schools in Great Britain. Further particulars will be found in our advertisement-pages, or can be obtained by applying directly to the secretaries of the various institutions. Economy is frequently effected by taking advantage of local facilities, and the means of transit to or from the school are worth study to save time and money.

LONDON.

The School of Pharmacy,

17 *Bloomsbury Square, London, W.C.*

Staff: Botany—Mr. H. J. Jeffrey, A.R.C.Sc. Chemistry and Physics—Professor A. W. Crossley, D.Sc., Ph.D., F.R.S., Sec.C.S. Assistant Lecturer: Mr. C. H. Warner, B.Sc., A.I.C. Demonstrators: Mr. C. H. Hampshire and Mr. G. F. Morrell. Pharmaceutics—Professor Henry G. Greenish, F.I.C., F.L.S. (*Dean*); Demonstrator: Mr. H. M. Harvey.

The session commences on September 30, 1909. Two courses of study are given—elementary and advanced. The elementary course covers the subjects required for the Minor examination, and extends to the end of June 1910. The advanced course commences in October and extends to the end of March 1910. Students may, however, enter the school at any time and for any subject or part of the course, or for special courses. The fee for the elementary course is 32*l.* 11*s.*, or 30*l.* to student-associates of the Society, and for the advanced course 18*l.* 18*s.*, or 18*l.* to student-associates or members of the Society, additional term for students who have completed the elementary course 6*l.* 6*s.* Summer term for students who have completed the advanced course, 4*l.* 4*s.*

Muter's South London School of Pharmacy,

325 *Kennington Road, London, S.E.*

Founder: Dr. J. Muter. Principals: Messrs. A. H. M. Muter, F.I.C., F.C.S., and Charles A. Haekman, F.I.C. Staff: Mr. Frank Armstrong; Mr. John Thomas, B.Sc., Mr. Otto Cutress. Secretary: Miss G. Duckworth, L.L.A.

The session at this school lasts from September until the middle of July. Fresh courses of lectures for the Minor and Major begin early in September, October, January, and April. The fees for the Minor or Major are 8*l.* 8*s.* a term; except September to January, 9*l.* 9*s.* A Tutorial Class for the October examinations begins on August 18. Fee, 4*l.* 4*s.* The examination for the Muter Open Entrance Scholarship, entitling the successful candidate to free tuition, takes place on September 2. Arrangements can always be made for students wishing to take a "part-time" course. Evening classes are also held. Fees, 1*l.* 5*s.* to 3*l.* Post-graduate courses in the analysis of food and drugs or urine can be arranged.

London College of Chemistry, Pharmacy, and Botany,

323 *Clapham Road, London, S.W.*

Principals: Mr. Henry Wootton, B.Sc., and Mr. A. Kirkland, Ph.C.

Minor courses commence on September 6 and at the beginning of January and April. Fees, 9*l.* 19*s.* 6*d.* to 10*l.* 10*s.*, according to length of the term. A six months' Major course begins on October 6 (fee, 13*l.* 2*s.* 6*d.*) and also three months' course in April for the July examination (fee, 6*l.* 16*s.* 6*d.*). Revision course for the October Minor examination commenees on August 18. Fee, 5*l.* 5*s.* Evening classes are held. Fees, 1*l.* 1*s.* to 2*l.* 10*s.* Preliminary course begins in September. Fee for three months, 4*l.* 4*s.* Courses for the Apothecaries Assistants' Examination commences on August 18 and in October, January, April. Fee for full course (six months), 10*l.* 10*s.*; for term of three months, 5*l.* 5*s.*

South of England College of Pharmacy,

186 *Clapham Road, London, S.W.*

Principal: Mr. H. Lucas, Ph.C., F.C.S.

Minor courses of three months' duration begin on October 1 and early in January and April. Fees, 9*l.* 9*s.* Tutorial class starts on August 12 for the October examination; fee, 5*l.* 15*s.* 6*d.* Three months' Major courses start in January and April; fee, 8*l.* 8*s.* Evening classes are arranged, fees from 1*l.* 1*s.* per term.

The Westminster College,

402 *Clapham Road, London, S.W.*

Manager: Mr. G. S. V. Wills, Ph.C., F.L.S.

Three ordinary courses commence early in October, January, and April. A short course is held from August 17 until the October examination Ordinary course, fee 8*l.* 8*s.*; two courses, 12*l.* 12*s.*, or until qualified, 15*l.* 15*s.* Short course, fee 5*l.* 5*s.* Courses of instruction are given for Major, Apothecaries' Assistant, and Preliminary examinations. Evening classes are held on Tuesday and Thursday evenings from 6 to 9; fee, 1*l.* 1*s.* and 1*l.* 11*s.* Postal tuition is a feature.

Imperial College of Chemistry,

49 *and* 51 *Imperial Buildings, Ludgate Circus, London, E.C.*

Principal: Mr. F. Davis. Courses for the Minor examination begin in January, April, July, and October. Fee, 10*l.* 10*s.* per course, or 17*l.* 17*s.* for two courses: Major, 8*l.* 8*s.* Evening classes, fees 1*l.* 11*s.* 6*d.* to 4*l.* 14*s.* 6*d.* for three months.

Brixton School of Chemistry and Pharmacy,

78 *Stockwell Park Road, London, S.W.*

Principal: Dr. A. B. Griffiths, F.R.S.E. Classes are held for the Minor, Major, and Apothecaries' Hall examinations. For particulars as to fees apply to the Principal.

THE PROVINCES.

Barrow-in-Furness.

At the *Technical School* the evening classes in theoretical and practical chemistry are suitable for Minor students. Secretary, Mr. W. Hutchinson, Town Hall.

Bath and West of England College of Chemistry and Pharmacy,

6 *Cleveland Place East, Bath.*

Principal: Mr. David J. Williams, Ph.C., F.C.S.

A revision course begins on August 23 for the October Minor, fee 4*l.* 4*s.*; and a long course on September 1, fee 9*l.* 9*s.* The fee for the January or April term is 8*l.* 8*s.* Preparatory postal tuition is offered, fees 1*l.* 1*s.* to 5*l.* 5*s.* Evening classes are held, fees 1*l.* 1*s.* to 2*l.* 10*s.* 6*d.*; Major courses, three months 6*l.* 16*s.* 6*d.*, and six months 12*l.* 12*s.* Apothecaries' Assistants' course (six months) 9*l.* 9*s.*, three months 5*l.* 5*s.*

Birmingham and Midland College of Chemistry, Pharmacy, and Botany,

45 *Newhall Street.*

Principal: Mr. G. L. Scott, Ph.C. The last term began on July 15. Other terms start early in September, October, January, and April. Major course and afternoon and evening classes are also held. The next session begins on September 20. Classes are also held for the Apothecaries' Hall examinations.

Birmingham Municipal Technical School,

Suffolk Street.

Evening classes are held in botany by Mr. W. B. Grove. Fee for elementary stage, 2*s.* 6*d.*, and advanced course, 3*s.* 6*d.* Courses in chemistry for pharmacy students are given on Wednesdays from 2.30 to 5.30 P.M. by Messrs. A. W. T. Hyde and D. F. Twiss; term fee, 5*s.* for the first year and 6*s.* for the second. The C. J. Woodward Memorial Prizo of 3*l.* 10*s.* is awarded to the student who does best in the sessional examination of the second year. Secretary, Mr. Geo. Mellor.

Birmingham University.

Instruction in the subjects of the Minor and Major examinations is also given at the University, where the Professor of Chemistry is Dr. Percy F. Frankland, F.R.S.

Mr. F. H. Alcock, Ph.C., F.I.C.,

Temple Chambers, Broad Street Corner, Birmingham,

gives private tuition for the Minor and Major examinations and has special facilities for courses in analytical chemistry.

Bradford Technical College.

Head of Department, Professor W. M. Gardner, M.Sc., Lecturer in Botany, Materia Medica, and Pharmacy, Mr. W. West, F.L.S. The general pharmaceutical course includes chemistry and physics, botany, materia medica and pharmacy, and dispensing, and extends over two years, and is so arranged that apprentices can prepare for the Minor and Major examinations without giving up shop-duties. The classes are held in the afternoons and evenings. Fees: day course 5*l.*, and evening course 7*s.* 6*d.*, per session.

Brighton Technical College,
Richmond Terrace.

A pharmaceutical course for Minor students can be obtained at this college. For particulars apply to the Principal, Dr. C. H. Draper, B.A.

Bristol University.

Principal—Professor C. Lloyd Morgan, LL.D., F.R.S. Lecturer in Pharmaceutics, Mr. O. C. M. Davis, Ph.C. A complete day-course is provided for the Minor examination at this college, and extends from October till July. Fee, 14*l.* 14*s.*, including registration. For further particulars apply to the Registrar, Mr. James Rafter.

Merchant Venturers' Technical College, Bristol.

Principal: Professor J. Wertheimer. The evening classes in botany, chemistry, and physics are suitable for pharmaceutical students. Fees for each class, 5*s.* and 7*s.* 6*d.*

Derby Technical College.

Principal: Mr. F. W. Shurlock, B.A., B.Sc. The instruction in pharmacy and materia medica is given by Mr. S. Taylor, Ph.C., on Wednesdays. Fee, 1*l.* 1*s.* per term. Chemistry and botany classes are also available.

Royal Albert Memorial College, Exeter.

Principal, Mr. A. W. Clayden, M.A.; Registrar, Mr. A. Woodbridge. A complete course of instruction (day or evening) for the Minor is given here. Fee, 10*l.* 10*s.* per annum.

Technical School, Storey Institute, Lancaster.

Principal, Mr. William French, M.A., F.I.C. The classes in botany, chemistry, and physics are suitable for Minor students. Fee, 7*s.* 6*d.* for complete course in each subject.

Leeds College of Pharmacy,
Clarendon Road.

Principal, Mr. F. Pilkington Sargeant, Ph.C., F.C.S. Full time, weekly and evening classes are held, also a ladies' class. The winter session begins on October 12, and full-time courses commence next January and April. Fees: full time, 14*l.* 14*s.* for six months, 8*l.* 8*s.* for three months; weekly or evening, 4*l.* 4*s.* for six months: ladies', 8*l.* 8*s.* for six month.

Leeds Central Technical School,
Leeds Institute, Cookridge Street.

Head-master, Mr. R. E. Barnett, B.Sc. A pharmaceutical course covering two sessions on three evenings a week commences on September 20. Mr. J. H. Gough, Ph.C., undertakes the special instruction in materia medica and pharmacy.

Leeds University.

The chemistry, physics, and botany courses are suitable for pharmacy students. Mr. Gough is demonstrator in practical pharmacy.

Liverpool School of Pharmacy,
18 *Colquitt Street.*

Principal, Mr. H. Humphreys Jones, Ph.C. Day and part-time classes are held. A short revision course starts on August 17, fee 4*l.* 4*s.* The winter term begins on September 13 and continues till Christmas. Courses also begin in January and April; fee 9*l.* 9*s.* The fee for two consecutive courses is 16*l.* 16*s.* The part time classes are held on Wednesdays from 3 to 10 P.M., beginning September 18; fee for course, 3*l.*, or session, 7*l.* 10*s.*

Liverpool University.

Complete courses covering the requirements of the Pharmaceutical Society's examinations are given during the academic year commencing in October. The junior course is adapted to the Minor, and the Senior course is suitable for the Major. Courses in chemistry, botany, materia medica, and pharmacy may be paid for separately or a composition fee of 18*l.* 18*s.* for the session's pharmacy course. Mr. Prosper H. Marsden is the lecturer in pharmacy and materia medica. For particulars apply to the Registrar.

Manchester College of Pharmacy,
225A *and* 227A *Oxford Road.*

Director, Mr. Charles Turner, Ph.C., F.C.S. The year's work for the Minor is divided into the following courses: August 23 to January examination (fee 10*l.* 10*s.*), October to the April examination (fee 14*l.* 14*s.*), and January to the July examination (fee 14*l.* 14*s.*). Short brisk courses of three months' duration are held for advanced students; fee, 8*l.* 8*s.* Local classes and evening classes commence in January on Tuesdays and Wednesdays from 2 to 9 P.M., and 7 to 10 P.M. respectively. Fee, 4*l.* 4*s.* six months, Major course, 6*l.* 6*s.* for three months.

Manchester University.

The professional staff of the Pharmaceutical Department consists of Dr. E. Rutherford, F.R.S. (physics), Professors H. B. Dixon, F.R.S., and W. H. Perkin, F.R.S. (chemistry), Dr. R. B. Wild, M.Sc. (materia medica and pharmacy), Dr. F. E. Weiss and W. H. Lang (botany), and Mr. James Grier, Ph.C., M.Sc. (pharmacy and pharmaceutical chemistry). The work for the Minor courses is covered in a winter and summer session. The second year of two sessions is for Major students. Fees: Winter Session, 15*l.* 15*s.*; summer session, 4*l.* 4*s.* The degree of B.Sc. in pharmacy is granted. For particulars see p. 300.

Northern College of Pharmacy,
100 *and* 102 *Burlington Street, Manchester.*

Principals, Mr. Geo. Clayton, Ph.C., F.C.S., and Mr. F. Lawson, Ph.C., B.Sc. A short revision course for the October Minor starts on August 23. Fee, 4*l.* 14*s.* 6*d.* Four-months' and seven-months' courses commence simultaneously on September 1. Fees, 10*l.* 10*s.* and 15*l.* 15*s.* respectively. Major courses are given. Afternoon, Once-a-week, and Evening courses commence the first week in September and January; fee, 2*l.* 10*s.* to 4*l.* 4*s.* Courses of three months' duration commence in October, January, and April; fees, 9*l.* 9*s.*

North of England School of Chemistry and Pharmacy,
55 *Northumberland Street, Newcastle-on-Tyne.*

Principal, Mr. J. Stableford Hill, Ph.C. A short course for the October examination begins in August; fee, 5*l.* 5*s.* Three months' terms commence on first Monday in October, January, and April; fee, 8*l.* 8*s.* Evening (three per week) and Wednesday afternoon classes are held; fee, 3*l.* 3*s.* per term. Major course, 7*l.* 7*s.* per term.

Armstrong College, Newcastle-on-Tyne.

Instruction in most of the subjects for the Minor can be obtained.

Nottingham School of Pharmacy,
13 *Victoria Street.*

Principal, Mr. S. Royce, Ph. C. A four-months' course for the Minor commences on September 1; fee, 9*l.* 9*s.* Other courses start at the beginning of each quarter; fee, 8*l.* 8*s.* (three months), and so on according to length. Evening classes are held on Monday and Friday, and practical work classes on Wednesday from 2 to 5 P.M., commencing September 27. Fees, 1*l.* 1*s.* to 2*l.* 7*s.* 6*d.*

Nottingham University College.

Classes in all Minor and Major subjects can be obtained. Registrar, Mr. P. H. Stevenson.

Plymouth Municipal Science Schools.

The evening pharmaceutical courses in chemistry and botany, with practical work, cover four years. Particulars from the Principal, Mr. J. B. Brown, B.Sc.

Reading University College.

Day and evening courses in chemistry, botany, and materia medica, suitable for pharmaceutical students, can be taken. Fees, day course, 20*l.* per session, and evening classes 5*s.* to 7*s.* 6*d.* per subject. Particulars from the Registrar.

Sheffield University.

The classes in botany, materia medica, and chemistry are available for students of pharmacy. A prospectus of the classes can be had from the Registrar.

Hartley University College, Southampton.

Principal, Dr. Spencer W. Richardson, M.A. Courses of chemistry, botany, and physics suitable for the Minor and Major examinations can be arranged for. Several good scholarships are offered.

North Stafford School of Chemistry and Pharmacy,
Kidsgrove, Stoke-on-Trent.

Principal, Mr. E. Griffiths, Ph.C. Day and evening courses are given for the Minor examination, the next commencing on September 6. Particulars of fees from Principal.

Wolverhampton Municipal Science and Technical School.

Day and evening classes in chemistry, physics, and botany are available for students of pharmacy. The lecturers are—chemistry, Mr. W. Whitehouse, F.C.S.; physics and optics, Mr. A. T. Harrison, B.Sc.; botany, Mr. S. Phillips, Ph.C.

SCOTLAND.

[Robert Gordon's College School of Pharmacy, Aberdeen.

Head Teacher, Mr. Gilbert Simpson, Ph.C. A term for the October Minor begins on August 23 (fee, 3*l.* 3*s.*), and ordinary courses begin on October 5, January 5, and April 5. Fee, 7*l.* 7*s.*, and 6*l.* 6*s.* per term after the first. Evening classes begin on October 4, fees 10*s.* 6*d.* to 1*l.* 1*s.* per subject.

Royal Dispensary and School of Pharmacy of Edinburgh,
21 *West Richmond Street, Edinburgh.*

Principal, Mr. William Duncan, Ph.C., F.C.S. A revisal course commences in August. Full terms begin in October, January, and April; fee, 8*l.* 8*s.* per term. Evening classes (Mondays, Tuesdays, and Thursdays, at 8.30) begin in September. Fee, 3*l.* 3*s.* per term of three months. Major course (three months), fee 10*l.* 10*s.*

Central School of Pharmacy,
26 Clyde Street, Edinburgh.

Principal, Mr. W. Beaverley Cowie, Ph.C., F.C.S. Short courses of instruction for the Minor and Major examinations begin on August 17 and the Winter Session opens on October 5, other terms commencing in January and April. Day and evening classes are held. Fees, day, 8*l.* 8*s.*; evening, 3*l.* 3*s.* per term.

Heriot-Watt College,
Chambers Street, Edinburgh.

Principal, Dr. A. P. Lawrie. Mr. William Duncan, Ph.C., F.C.S., lectures on pharmaceutics on Wednesday evenings at 8.30, beginning in October. The fee is 5*s.* per session. Evening courses in chemistry (fee, 10*s.*), in botany and physics (fee, 5*s.*) are also given.

Glasgow School of Pharmacy,
180 West Regent Street, Glasgow.

Principal, Mr. John Lothian, Ph.C. A short course for the October examinations begins on August 16 (fee, 4*l.* 4*s.*). Full three months' courses for the Minor and Major begin on October 4, fee 8*l.* 8*s.* Evening classes also commence in October, fees 1*l.* 1*s.* *to* 3*l.* 3*s.* per quarter. Afternoon classes are held once a week, fee 2*l.* 2*s.* Evening classes for the Preliminary examination (two evenings weekly), conducted by Mr. Malcolm Mackinnon, M.A., start in September, fee, 1*l.* 1*s.* per quarter.

West of Scotland College of Pharmacy,
4, Newton Street, Charing Cross, Glasgow.

Staff: Mr. Thomas S. Barrie, Ph.C., F.C.S., Mr. W. Graham, and Mr. W. C. Macmaster, M.A. Day and evening tutorial courses for the October examinations begin on August 18. Fees: day course, 4*l.* 4*s.*; evening classes (four evenings a week), 1*l.* 11*s.* 6*d.*; winter session evening classes, 2*l.* 2*s.* to 3*l.* 3*s.* per term. Classes for the various Preliminary examinations are conducted, also correspondence classes.

IRELAND.

The conditions regulating the practice of pharmacy differ considerably in Ireland from those in force in England. The Pharmaceutical Society of Ireland, as constituted and incorporated by the Pharmacy Act (Ireland), 1875, is entrusted with the duty of ascertaining if persons are fitted to dispense prescriptions, and also of enforcing the regulations surrounding the sale of poisons in Ireland. The pharmaceutical chemist examined and registered under the above Act has the legal right to compound prescriptions as well as to sell poisons. The "registered druggists" created by the Amendment Act, 1890, act as poison-sellers, but not as compounders of medical prescriptions. By the Poisons and Pharmacy Act, 1908, certain poisons used solely for agricultural and horticultural purposes may be vended under licence. A grade of pharmaceutical assistants also exists, who are certified by examination as qualified to have control of a pharmacy during the principal's temporary absence. Particulars of the Society's Preliminary examination (which must be taken before apprenticeship) will be found on p. 294.

Six months must elapse before the unsuccessful candidate can re-enter for any of the Irish Society's examinations.

The Pharmaceutical Licence Examination

cannot be taken until four years after the Preliminary examination (unless apprenticeship commenced before January 1, 1907). The candidate, who must be twenty-one years of age, must also have been engaged four years as an apprentice or assistant with a pharmaceutical chemist, chemist and druggist of Great Britain, or apothecary, or firm of any of the foregoing keeping open shop, or have served a four-years' apprenticeship to a chemist and druggist or registered druggist, and (after passing the Preliminary examination) two years with a pharmaceutical chemist, etc. Provision is made for service with more than one employer. A certificate must also be obtained showing that a course of instruction has been taken at an approved institution. The institutions in the following list marked with an asterisk are approved for courses of botany and materia medica (unless otherwise indicated), while all of them give the other necessary course in practical chemistry. The last-named must extend to at least three months, with 100 hours' actual work at the laboratory bench:

*School of the Pharmaceutical Society of Ireland.
*School of the Pharmaceutical Society of Great Britain.
Cecilia Street School of Medicine, Dublin.
City of Dublin Technical Schools.
Government School of Science, South Kensington.
* University Colleges, Belfast, Cork, and Galway.
Royal College of Science for Ireland, Dublin.
Royal College of Surgeons in Ireland, Dublin.
Trinity College, Dublin.
School of Physic, Trinity College, Dublin (botany and materia medica only).
Anderson's College Medical School, Glasgow.
*Royal Academical Institution, Belfast.
*Municipal Technical Institute, Belfast.
Crawford Municipal Technical Institute, Cork (botany and chemistry only).

The examination is held at the Pharmaceutical Society's House, 67 Lower Mount Street, on the second Wednesdays of January, April, July, and October. Candidates must give notice to the Council fourteen clear days before the date of the examination, and lodge with the Registrar a receipt of having paid the fee of 5*l.* 5*s.* into the Bank of Ireland to the credit of the Society.

A birth certificate, the Preliminary examination certificate, a declaration as to service, and class certificates have to be sent with the application, as to all of which the candidate should ask instructions from the Registrar well beforehand.

Subjects of Examination.

Botany.—To recognise the principal indigenous plants used in medicine, to refer them to their natural orders, and to give the definitions and the distinctive characters of their several parts.

Materia Medica.—To recognise specimens of the drugs of the Pharmacopœia, to describe their characters and active principles, name the sources from which they are obtained, and the official preparations into which they enter; and to detect adulterations.

General and Pharmaceutical Chemistry.—The elementary laws of chemistry and physics, including chemical equations. To recognise the chemical substances of the Pharmacopœia; to describe the processes by which they are obtained; qualitative analysis (including the tests of the Pharmacopœia) and volumetric analysis; and to submit to a practical examination in these subjects. (The Council recommends Corbyn and Stewart's "Physics and Chemistry.")

Practical Pharmacy.—To translate Latin prescriptions; to detect dangerous doses; to compound and dispense correctly. To explain the processes of making the non-chemical preparations of the Pharmacopœia, and to recognise them; and to have an intimate knowledge of the Sale of Poisons (Ireland) Act, 33 and 34 Viet. chap. 26, 1870.

The examination is written, oral, and practical. The candidate must obtain 55 per cent. of the total marks obtainable to pass the examiners, with a minimum percentage in pharmacy of 50, and in botany, materia medica, and chemistry of 40 each. A candidate who obtains 70 per cent. of the total marks and not less than 50 per cent. in any subject is awarded a "pass with honours." The questions set are printed in the Society's "Calendar" (price 1*s.* 6*d.*, by post 1*s.* 9*d.*, from the Registrar). The fee for re-examination for the Licence is 2*l.* 2*s.* The Registrar will supply any additional information required.

Assistants to Pharmaceutical Chemists.

The conditions for examination for this certificate are very similar to those for the Licence examination. The declarations of apprenticeship are the same, but the candidate need not be twenty-one years old nor have taken the special courses of instruction. The fee is 2*l.* 2*s.* As the examination is held quarterly after the Licence examination, candidates rejected at the latter have time to present themselves at the Pharmaceutical Assistant examination on the following Monday on giving notice to the Registrar and paying a fee of one guinea. The following are the

Subjects of Examination.

Prescriptions.—Candidates will be required to read autograph prescriptions, translate them into English, render a correct translation of the directions for use, and detect unusual doses.

Practical Dispensing.—To weigh, measure, and compound medicines, write the directions in suitable language, finish, and properly direct each package.

Materia Medica and Quality of Specimens.—To recognise the Pharmacopœia chemicals in frequent demand, and specimens of roots, barks, leaves, fruits, resins, and gums in ordinary use; also to estimate the quality of each specimen submitted, and its freedom from adulteration.

Pharmacy.—To recognise the preparations of the Pharmacopœia which are not of a definite chemical nature, such as extracts, tinctures, and powders, and give the proportions of the more active ingredients. The candidates will also be examined in the Sale of Poisons (Ireland) Act.

Registered Druggists.

Every person who has served a term of service of not less than four years as an apprentice or assistant to a

pharmaceutical chemist, chemist and druggist, registered druggist, or licentiate apothecary keeping open shop is eligible for entry to this examination. The subjects are :

English orthography and composition.
Arithmetic and the weights and measures of the British Pharmacopœia.
The appearance and properties of the various drugs and chemicals in general use.
The Sale of Poisons (Ireland) Act.

The examination is held in Dublin and Belfast (if twelve candidates enter for the latter) on the second Tuesdays of January, April, July, and October. Application has to be made to the Registrar in Dublin at least fourteen days before the date of the examination, with the necessary certificates of service and a receipt for the examination fee (2*l.* 2*s.*) paid to the Bank of Ireland to the credit of the Society. An additional registration fee of 2*l.* 2*s.* has to be paid on passing the examination. Fee for re-examination 10*s.* 6*d.*

Pharmaceutical Education in Ireland.

The names are given above of educational establishments where approved classes of instruction in certain subjects for the Licence examination are held. It has been suggested that the new National University might be induced to grant degrees in pharmacy if the need were shown to exist. The following particulars of the official school are taken from the Pharmaceutical Society's prospectus :

Pharmaceutical Schools of Chemistry, Botany, and Materia Medica, 67 Lower Mount Street, Dublin. Directors : Practical Chemistry School, Professor P. Kelly, M.P.S.I. ; Materia Medica, Dr. J. S. Ashe, L.R.C.P. and S.I., M.P.S.I. ; Botany, Mr. L. B. Smyth, B.A. The fees for the courses to meet the Society's regulations are : Practical chemistry (six months), 6*l.* 6*s.* ; practice course (three months), past students, 2*l.* 2*s.*, students of other schools 3*l.* 3*s.* ; botany and materia medica (three months), 2*l.* 2*s.* The winter course begins on October 1. The practical chemistry class is held on Monday, Wednesday, and Friday evenings. A day class (three months) commences on April 1, fee 6*l.* 6*s.* A day practice course also begins in April. The botany and materia medica classes are held on Tuesday and Thursday evenings, with occasional Saturday demonstrations. Printed particulars can be had by applying to the Registrar, 67 Lower Mount Street, Dublin.

Belfast Municipal Technical Institute. At the pharmaceutical department in connection with this Institute lectures in chemistry, practical chemistry, botany, materia medica, and pharmacy can generally be taken. For particulars apply to the Principal.

Apothecaries' Assistants.

The Society of Apothecaries, London, and the Apothecaries' Hall in Ireland (Dublin) give certificates of competency to act as dispensers to apothecaries. Women candidates form the bulk of entrants for these examinations. The certificate is accepted as evidence of skill in compounding by some institutions. Lady dispensers are also employed by dispensing doctors. Endeavours are being made to get the Pharmaceutical Society of Great Britain to exercise its powers to register as "pharmaceutical chemists or chemist and druggists" certified assistants to apothecaries under the Apothecaries' Act, 1815, who produce evidence of sufficient skill and knowledge to be so registered. The matter is under consideration by the Council of the Pharmaceutical Society. The Clerk to the Apothecaries' Society has suggested that assistants might be registered who (1) have held the certificate for five years, (2) have been actually employed during that time in dispensing, (3) are holding at the time of registration appointments as dispensers under the Local Government Board or other public bodies in hospitals or dispensaries or are acting as dispensers to medical practitioners in private practice.

The *Society of Apothecaries*, Blackfriars, London, E.C., holds an examination for a certificate of qualification in compounding and dispensing medicines. The examination commences on the fourth Monday in January, April, July, and October. The candidate must be eighteen years old, as attested by a certificate accompanying the form of entry (obtainable from the Secretary, Mr. F. Haydon, L.R.C.P.). The entry-form must be filled and returned with the proper examination-fee (5*l.* 5*s.* for first appearance and 3*l.* 3*s.* for re-examination) at least fourteen days before the date of examination. A certificate must also be sent showing that special instruction has been taken in practical pharmacy for six months. The latter declaration must be signed by a registered medical practitioner, or an assistant of the Society holding a public appointment, or a legally qualified chemist.

The examination is in two parts—oral and practical—comprising the following subjects :

(1) A practical examination in the *Compounding and Dispensing of Medicines.*
(2) An oral examination in *Chemistry*, comprising general principles; preparation and properties of the elements; hydrochloric, nitric, and sulphuric acids, and their action upon the common metals, metallic oxides and carbonates; chemical composition of water and air: preparation, properties, and tests of salts of ammonium, sodium, potassium, calcium, magnesium, alum, zinc, iron, lead, silver, copper, bismuth, antimony, and mercury, as well as such things as chloroform, glycerin, quinine, and hydrocyanic, acetic, tartaric, and citric acids and their common salts.
Materia Medica and Pharmacy.—Candidates are required to show a knowledge of the chemical and physical characters, the composition, and doses of the articles and preparations included in the British Pharmacopœia, 1898, and to recognise many of them. The examination includes the translation of prescriptions.

The candidate is credited with those subjects in which he passes. In the event of failing only the subject or subjects in which he was unsuccessful need be taken.

All the schools of pharmacy give instruction for this examination. Pupils are also prepared by some women-dispensers in public institutions.

The *Apothecaries' Hall of Ireland*, 40 Mary Street, Dublin, holds an examination for the certificate of assistant on the first Friday of each month except August. Candidates must be eighteen years of age, and have spent two years at practical pharmacy under the superintendence of a registered apothecary or pharmaceutical chemist, and show that they are of good moral conduct. The subjects of the examination are :

Pharmacy, Practical and Theoretical, including the correct translation of medical prescriptions.
Materia Medica, including the doses of the Pharmacopœia, and the recognition of the drugs.
Antidotes used in cases of poisoning.
Pharmaceutical Chemistry, including the fundamental laws and recognition of poisonous chemicals. Knowledge of the British Pharmacopœia is requisite.
Metric System of Weights and Measures.

Notice of intention to appear must be given to the Secretary at the above address at least seven days prior to the examination. The fee is 2*l.* 2*s.* Re-examination costs 1*l.* 1*s.*

Degrees in Pharmacy.

Two Universities grant degrees in the pharmaceutical department of science—the University of Manchester in England, and the University of Glasgow in Scotland. We append some details concerning the necessary curricula of these two Universities. The prospectuses of the Universities must be consulted for further particulars.

The B.Sc. (Pharm.) Manchester. Three years' attendance (after Matriculation) in the Pharmaceutical Department of Owens College is required. The course of instruction prepares the student to take the Minor examination at the end of the first year, the Major examination at the completion of the second year, and to graduate at the termination of the third year. To enter for the degree of B.Sc. the candidate must present certificates of having attended the following courses :

(1) *First Year.*—Chemistry, physics, botany, and pharmaceutical laboratory.
(2) *Second Year.*—Chemistry (final standard), botany (final standard), and materia medica (advanced).
(3) *Third Year.*—Chemistry and any two of the following : Physics, electro-chemistry, pharmacology, bacteriology, toxicology, analysis of food and drugs.

Candidates must present themselves for the Intermediate examination at the end of their first year of study after passing the Matriculation examination. The subjects are : (i.) Physics with practical work ; (ii.) chemistry with practical work ; (iii.) botany with practical work ; (iv.) a practical examination in the pharmaceutical laboratory.

The subjects of the Final examination are : (i.) Chemistry ; (ii.) Two of the following : Botany, materia medica, physics, history of chemistry, electro-chemistry, pharmacology, bacteriology, toxicology, analysis of food and drugs.

B.Sc. (Pharm.) Glasgow.—The conditions under which the degree of Bachelor of Pharmacy is granted are similar to those for science degrees—viz., seven courses of instruction must be taken in the prescribed subjects during at least three academical years ; four of the seven courses must be taken at the Glasgow University, but the remainder can be entered upon at approved institutions. A detailed statement of the studies recommended is contained in the regulations for the degree (published by Messrs. J. MacLehose & Sons, 61 St.

Vincent Street, Glasgow). Two examinations which must be passed are as follows:

First Science Examination in mathematics or biology (*i.e.*, zoology and botany), natural philosophy, and chemistry. Candidates may present themselves in any one or more of these subjects at any examination.

Final Science Examination in chemistry, botany, materia medica, and pharmacy.

Before entering for the Final, candidates must, *inter alia*, produce evidence of being chemists and druggists registered under the Pharmacy Acts, 1852 and 1868, or of being graduates in medicine.

From the latter provision it will be seen that the degree is not open to Irish pharmaceutical chemists.

Medical.

This branch of education is one upon which we receive frequent requests for information from pharmacists who either have the desire to abandon pharmacy for medicine or require advice regarding a younger generation. Except for the extra cost of medical education and examination as compared with that required for pharmacists, there is no reason why those who can pass the Minor should not pass with equal facility the medical examinations. The easy graduation of the subjects of the examination and the fact that the candidate is examined in one subject at a time make the medical courses preferable to the pharmaceutical examination, where so many diverse subjects have to be prepared for at the same time.

The Medical Act, 1858, entrusted the regulation of the curriculum and examinations regarding medicine to the General Medical Council, which is composed of representatives of the Universities and Colleges, and regulations and recommendations have been issued to teaching and examining bodies with a view to standardising the curriculum and examinations.

It is probably best to state at once that there are two ways of

Entering the Medical Profession

by taking a University degree or a College diploma. The University degree is considered to give the doctor a better standing in the profession, but there is no difference as regards the final result—registration. Why we refer to it here is because the Entrance examinations vary, and the studies of boys or girls who are destined to enter the medical profession must be directed to the examination in view. The Universities require medical students to have passed a Matriculation examination, and this is also suitable as the Preliminary for those who wish to obtain the diplomas of the Colleges. It is, however, of a higher standard than the minimum requirements of the bodies granting diplomas. As most students aim at possessing diplomas, they are often content to take the less severe Entrance examinations, but we advise that a Matriculation examination such as that of the London University be passed if possible. This allows the student afterwards to take a degree if he so wishes.

Outline of Requirements.

Every student desirous of entering the medical profession must pass an approved Preliminary examination in arts and study at a recognised school of medicine for five years, during which time he will have to pass three examinations: (*a*) in the preliminary sciences of chemistry, physics, and biology; (*b*) in the intermediate medical subjects of anatomy and physiology, as well as in practical pharmacy; (*c*) the qualifying examination in medicine, surgery, and midwifery. The regulations of the General Medical Council in regard to

The Preliminary Examination

require that before a student can enter upon his medical curriculum he must pass a Preliminary examination in the subjects of general education, which must include the following:

1. *English.*—Grammar, paraphrasing, composition, questions on English history and geography.

2. *Latin.*—Grammar, translation into English from unprescribed Latin books, translation into Latin of a continuous English passage, and of short idiomatic English sentences.

3. *Mathematics.*—Arithmetic; algebra, including easy quadratic equations; geometry, including the subject-matter of Euclid, Books I., II., III., and simple deductions.

4. *One* of the following subjects:

(*a*) *Greek.*—Grammar, translation into English from unprescribed Greek books, translation into Greek of short idiomatic English sentences.

(*b*) *A Modern Language.*—Grammar, translation into English from unprescribed books, translation of a continuous English passage, and of short idiomatic English sentences.

The General Medical Council issues a list of examining bodies whose examinations in general education are recognised as qualifying for registration as a medical student. These include examinations by Universities, Government examinations, and chartered bodies, also examinations held outside the United Kingdom. All the University Matriculation or Preliminary examinations in the United Kingdom are recognised and certain of the local examinations, besides the first-class certificate and Medical Preliminary examination of the College of Preceptors and the Senior certificate examinations of the Central Welsh Board; the Leaving Certificate examinations of the Scottish Education Department, the Medical Preliminary examination of the Educational Institute of Scotland; the Middle and Senior grade examinations of the Intermediate Education Board of Ireland, and the Preliminary examination of the Royal College of Physicians and Surgeons in Ireland; provided, in the case of certain of these, that the whole of the subjects of the examinations are included and are passed at one time.

Students Must Register

before or not later than fifteen days from commencing their medical studies, and no student will be registered until he has attained the age of sixteen years, as evidence of which he must send a birth-certificate at the time of making his application. Application for admission to the Students' Register must be made as follows:

Students in England and Wales apply to Mr. Henry E. Allen, LL.B., B.A., Registrar of the Branch Council for England, 299 Oxford Street, London, W.

Students in Scotland apply to Mr. James Robertson, Registrar of the Branch Council for Scotland, 54 George Square, Edinburgh.

Students in Ireland to Mr. Richard J. E. Roe, Registrar of the Branch Council for Ireland, 35 Dawson Street, Dublin.

Registration by the General Medical Council is not obligatory in the case of students preparing for certain degrees—that of the London University, for example—or for the diplomas of the English Colleges of Physicians and Surgeons, but it is advisable that this should be done in all cases.

Professional Education.

The General Medical Council has laid down the requirements with regard to the course of study and examinations which persons desirous of qualifying for the medical profession must go through. As mentioned above, registration before commencing these studies is obligatory, and the period of professional study, between the date of registration and the date of the final examination for any diploma which entitles the holder to be registered under the Medical Acts, must be a period of *bonâ-fide* study during not less than five years. The exceptions are in regard to the first year, which may have been passed at a University or recognised institution where the subjects of physics, chemistry, and biology are taught. These are given on p. 304. In every course of professional study and examinations the following subjects must be contained:

(i.) Physics, including the elementary mechanics of solids and fluids, and the rudiments of heat, light, and electricity; (ii.) chemistry, including the principles of the science, and the details which bear on the study of medicine; (iii.) elementary biology; (iv.) anatomy; (v.) physiology; (vi.) materia medica and pharmacy; (vii.) pathology; (viii.) therapeutics; (ix.) medicine, including medical anatomy and clinical medicine; (x.) surgery, including surgical anatomy and clinical surgery; (xi.) midwifery, including diseases peculiar to women and to

new-born children; (xii.) theory and practice of vaccination; (xiii.) forensic medicine; (xiv.) hygiene; (xv.) mental disease.

The first four of the five years must be passed at a school or schools of medicine recognised by any of the licensing bodies enumerated in Schedule A of the Medical Act, 1858, except in the case of the first year, as noted above. There are also special conditions regarding midwifery practice. There are, besides, several recommendations of the G.M.C. in regard to the practical work of the curriculum and the clinical work, but no opinion is officially offered as to the manner in which the subjects should be combined for purposes of teaching or examination. The various medical schools, however, arrange the students' time in the winter and summer sessions in a manner calculated to include the necessary subjects before the time of the various examinations. Here, for instance, is the way it is arranged at the University College Hospital Medical School for students who intend taking the licence of the Royal College of Physicians of London and the diploma of member of the Royal College of Surgeons of England :

First Year.—*Winter*: Chemistry, physics, elementary biology.

(First examination, Parts 1, 2, and 3.)

Summer: Elementary anatomy, histology and practical histology, pharmacy.

(First examination, Part 4.)

Second Year.—*Winter*: Anatomy with dissection, junior experimental physiology and chemical physiology, pharmacology.

Summer: Anatomy, physiology, pharmacology, and (if not taken in first year) histology and practical histology; pharmacy.

Third Year.—*Winter*: Anatomy with dissection, senior experimental physiology and chemical physiology, practical physiology.

(Second examination.)

Summer: Midwifery, forensic medicine, junior clinical medicine, hospital appointments.

Fourth Year.—*Winter*: Medicine, surgery, pathology, practical pathology, hospital appointments.

Summer: Midwifery, pathology, therapeutics, senior clinical medicine, hospital appointments.

Fifth Year.—*Winter*: Medicine, surgery, practical surgery, clinical surgery, hospital appointments, anæsthetics, fever-hospital, vaccination.

Summer: Public health, ophthalmic medicine, mental diseases.

(Final examination.)

It will be convenient here to give the corresponding table as arranged for the University degrees of M.B. and Ch.B. This is the order of study at the Edinburgh University :

First Year.—*Winter*: First half—Chemistry, practical chemistry, anatomy, physics.

(Examination in physics.)

Second half—Chemistry, practical chemistry, practical anatomy.

(Examination in chemistry.)

Summer: Botany, practical botany, zoology, practical zoology, practical anatomy.

(Examination in botany and zoology.)

Second Year.—*Winter*: First half—Practical anatomy, physiology, experimental physiology.

Second half—Senior anatomy, practical anatomy, physiology, chemical physiology.

Summer: Practical anatomy, anatomy demonstrations, histology.

(Examination in physiology.)

Third Year.—*Winter*: First half—Surgery, pathology, practical pathology, anatomical demonstrations, practical anatomy, hospital attendance.

(Examination in anatomy.)

Second half—Surgery, pathology, clinical surgery, practical materia medica, *post-mortems*, vaccination.

(Examination in practical materia medica.)

Summer: Practical pathology (if not taken in winter), clinical surgery, *post-mortems*.

(Examination in pathology.)

Fourth Year.—*Winter*: First half—Medicine, materia medica, midwifery (including systematic gynæcology), clinical medicine, medical out-patients, dispensary, fevers.

Second half—Medicine, materia medica, midwifery, clinical medicine, medical out-patients, dispensary, fevers.

(Examination in materia medica.)

Summer: Operative surgery, public health, forensic medicine, mental diseases, clinical medicine, maternity cliniques.

(Examination in forensic medicine and public health.)

[Clinical classes in ophthalmology, skin-diseases, clinical gynæcology, larynx, ear and nose, and diseases of children can be attended during the fourth summer or during the first or second half of the fifth winter session.]

Fifth Year.—*Winter*: First half—Clinical surgery.

(Examination in midwifery.)

Second half—Clinical medicine, surgical out-patients.

(Examination in systematic medicine and surgery.)

Summer: Clinical medicine or clinical surgery.

(Examination in clinical medicine, clinical surgery, and clinical gynæcology.)

What it Costs.

The most urgent question with many people who intend entering the medical profession is, How much does it cost to qualify? It is not possible to give definite figures, but the following approximation is given in the Calendar of the Charing Cross Hospital Medical School for the Conjoint diploma :

Composition-fee (five years)	£120	15	0
Microscope, instruments, and books	27	0	0
Dissections, vaccination and fever hospital fees	9	10	0
Examination-fees	42	0	0
	£199	5	0

To this must be added board and lodging, clothes, and travelling-expenses for five years, which items are modified according to whether the student resides in the neighbourhood. Other estimates have been given in the *C. & D.* by pharmacists who went into the medical profession, but the one only way of modifying the fees is by means of scholarships, many of which are within the reach of clever pharmacists.

We now proceed to give an outline of the conditions upon which Universities and Colleges grant medical degrees and diplomas.

Universities Granting Medical Degrees.

Aberdeen.

The conditions of entry at this University and those of Edinburgh, Glasgow, and St. Andrews are the same. A Preliminary examination in English, Latin, elementary mathematics, and Greek (or French or German) has to be passed before commencing medical studies. It is held twice yearly, in March and September. Fee 10*s.* 6*d.* Certain degrees in arts and sciences of Universities of the United Kingdom and of the Colonies and India are recognised. The degrees granted by the University are M.B., B.Ch., M.D., and M.S., and are only conferred after examination and only on students of the University. At least two of the five years' curriculum, and at least eight of sixteen specified subjects for M.B., B.Ch., must be spent or taken in the Aberdeen University or some other University or College recognised by the University Court. There are four Professional examinations—(1) Botany, zoology, physics, and chemistry; (2) anatomy and physiology; (3) pathology and materia medica and therapeutics; (4) surgery, medicine, midwifery, forensic medicine, and public health—and the total fees are 23*l.* 2*s.*, with a guinea for each re-examination. Address, Mr. D. R. Thom, M.A., Secretary, The University, Aberdeen.

Birmingham.

The degrees granted are M.B., Ch.B., M.D., Ch.M., and also a B.Sc. in the subject of public health and a diploma (D.P.H.) in public health. Candidates must pass the University Matriculation examination in chemistry or experimental mechanics, English language, literature and history, Latin, mathematics, and a foreign language (or an approved examination). It is held in June and September. Of the five years' curriculum three or four (according to circumstances) must be passed at the University. Candidates may enter the Professional examination in chemistry and physics before commencing residence in the University, but after registering as medical students. There are five Professional examinations, the fee for each being 2*l.* Address: Mr. Geo. H. Morley, Secretary's Office, The University, Birmingham.

Cambridge.

The degrees conferred are M.B., B.C., M.D., and M.C. Diplomas in public health and tropical medicine are also granted. Candidates for M.B. and B.C. must be Arts graduates of the University, or shall pass the previous examination, and have five years of professional study. The full curriculum can be obtained at Cambridge, but residence at the University for nine terms (three years) only is required, and the student must take at least in each term two courses of lectures or practical in the subjects of the Professional examinations, of which there are three for M.B. (the first and

third two parts each), and an Act or Thesis. The two years of study out of the University may be taken practically at any medical school in the kingdom, in certain hospitals, or in recognised medical schools abroad. The usual course is to complete the more theoretical parts of the course in the University, and then to proceed to a London medical school for the purely professional work. The M.B. is a complete qualification—*i.e.*, it is not required to take B.C. for registration as a medical practitioner. Address, The Registrary of the University, Cambridge.

Dublin.

The medical degrees granted by the Royal University of Ireland are M.B., M.D., B.Ch., M.Ch., B.A.O., and D.P.H. Candidates must be B.A.s and spend five years in professional study. The Royal University of Ireland, Dublin, is a body whose work is confined to examining, and its duties will probably cease after this year For the degrees of medicine candidates must pass the Matriculation examination, the first University examination, and four Professional examinations. The fees for all these examinations amount to 7*l.* Address, the Secretaries, Royal University of Ireland, Dublin. The University of Dublin (Trinity College) also grants degrees in medicine, surgery, obstetrics, and State medicine. For particulars address Professor H. W. Mackintosh, M.A., the Registrar of the School of Physic. The Irish Universities Act, 1908, constituted the National University of Ireland, but the regulations for degrees are not yet available.

Durham.

The College of Medicine of the University of Durham is at Newcastle-on-Tyne. One diploma and six degrees are granted by this University, these including Bachelor and Doctor of Hygiene. Candidates for the medical degrees must pass the Matriculation examination, held at Newcastle in March and September, in additional mathematics, English history, physical and general geography, Latin and Greek, French or German. Certain examinations are recognised in lieu of this, including the Matriculation examinations of the Universities of London, Manchester, Liverpool, Leeds, Sheffield, Wales, and Birmingham. Also certain Senior Local examinations and Leaving Certificates. The fee for the examination is 1*l.* 10*s.*, and applications have to be addressed to the Rev. H. Ellershaw, University Offices, North Bailey, Durham. For the degree of M.B., at least one of the five years of professional education must be spent at the College of Medicine, Newcastle-on-Tyne. There are four Professional examinations. Fees, 25*l.* Address, Dr. Robert Howden, Secretary, The College of Medicine, Newcastle-on-Tyne.

Edinburgh.

Four degrees in medicine and surgery are conferred by the University of Edinburgh and admit to the medical register. The conditions of entry are the same as for Aberdeen University. The fees for the four Professional examinations amount to 23*l.* 2*s.* Communications should be addressed to the Dean of the Medical Faculty (Professor D. J. Cunningham, M.D., D.Sc.), The University, Edinburgh, and letters respecting the Preliminary examination to Mr. James Dowie, The University, Edinburgh.

Glasgow.

Five degrees in medicine and surgery are granted. The conditions for the M.B., C.M. degrees of the Glasgow University are similar to those at Aberdeen University. The examination fees are the same. Address, Mr. W. Innes Anderson, Matriculation Office, The University, Glasgow, in respect to the Preliminary examination; but women students should address the Secretary, Queen Margaret College, Glasgow. In reference to professional matters address the Dean of the Faculty of Medicine, The University, Glasgow.

Leeds.

The University of Leeds grants the degrees of M.B. and Ch.B., and in association with the Universities of Liverpool, Manchester, and Sheffield, has a Matriculation examination, the subjects of which are English (language or literature) and English history, mathematics, Latin, and two of the following subjects, one of which must be a language: (1) Greek; (2) French; (3) German; (4) some other modern language approved by the Board; (5) mechanics or physics; (6) chemistry; (7) geography; (8) natural history. There are certain exemptions, and certificates are issued for the purpose of registration as students by the G.M.C. to candidates who have satisfied the examiners in English subjects, mathematics, Latin, and another language, although they may not have passed the Matriculation. The examination is held in July and September. Fee, 2*l.* Address Mr. W. F. Husband, LL.B., Registrar, The University, Leeds. Of the five years' curriculum for degrees two years must be spent in the Leeds University, one of them subsequent to the First Professional examination, which consists of (1) physics and chemistry; (2) biology. The Second examination is in two parts—(1) anatomy and physiology; (2) materia medica and pharmacy. The Final examination, in two parts, comprises (1) pathology, forensic medicine, and public health; (2) medicine, surgery, obstetrics, and gynæcology, pharmacology, and therapeutics. The examination-fees amount to 15*l.* Candidates for M.D. and Ch.M. must have received the degree of M.B. and Ch.B. at least a year before. Address, Professor Guünbaum, Dean of the Faculty of Medicine, The University, Leeds.

Liverpool.

The conditions of entrance upon a course of medical study for the degrees of M.B. and Ch.B. at the University of Liverpool are the same as those of Leeds (*q.v.*). The subjects of the Final examination are grouped in parts, which may be taken separately. A diploma of tropical medicine (D.T.M.) is granted at this University. Address, Mr. K. W. Monsarrat, Dean of the Faculty of Medicine, The University, Liverpool.

London.

The University of London (South Kensington, S.W.) confers the degree of M.B. upon external and internal students, the latter being those who study under the direct control of the University or any one or more of the appointed or recognised teachers of the University; while external students are persons who pursue their medical studies at Institutions recognised by the University. Practically every medical school in the British Isles is recognised for registration as an internal student. In all cases, however, the Matriculation examination or Higher Standard School examination of the University must be passed before the five and a half years' curriculum is commenced. There are certain exemptions for matriculates of home and foreign Universities. All students should read the regulations respecting the courses of study, obtainable from the Academic Registrar at the University, price 3*d.* The Professional examination comprises the Preliminary and Scientific. Part I.: Inorganic chemistry, physics, and biology, one academic year after registration. Part II.: Organic chemistry, six months after Part I. The Intermediate, in anatomy, physiology, and pharmacology, including pharmacy and materia medica, is taken at the end of the second year; and the Final, in medicine, surgery, midwifery and diseases of women, pathology, forensic medicine, and hygiene, may be taken in two groups, with or without an interval in between. Total fees, 25*l.*

Manchester.

The arrangements at the Manchester University for the degrees of M.B. and Ch.B. are the same as at Leeds (*q.v.*), Liverpool, and Sheffield. Two years of the curriculum must be passed at the Manchester University, and the Professional examinations taken there. Address, Professor W. Stirling, Dean of the Faculty of Medicine, The University, Manchester.

Oxford.

The curriculum at the University of Oxford for the degree of Bachelor of Medicine extends over a period of seven years, in the course of which the student takes the B.A. degree in the School of Natural Science, and finishes with the degree of B.M. The subjects of study throughout are those of the medical curriculum and responsions. Dr. W. Osler, Regius Professor of Medicine, issues a leaflet concerning the curriculum, which may be obtained from him at the University Museum, Oxford.

St. Andrews.

Four degrees in medicine and surgery are conferred. The conditions of entry at this University are the same as at Aberdeen. Medical students study at the University College of Dundee, as far as the courses provided there permit. Full particulars respecting the curriculum and examinations may be obtained from Professor C. R. Marshall, Dean of the Faculty of Medicine, University College, Dundee.

Sheffield.

Candidates for the degree of Bachelor of Medicine and Surgery pass the Joint Matriculation examination (see Leeds), and spend at least two of the five years of the Professional curriculum at the Sheffield University. A pamphlet issued by the Faculty of Medicine describes fully the courses of study which must be taken prior to entering for the three Professional examinations, each of which is divisible into two parts. Address, in respect to examinations, Mr. W. H. Gibbons, M.A., the Registrar; and, on other matters, Professor J. M. Beattie, M.D., Dean of the Faculty of Medicine, The University, Sheffield.

Diplomas Granted by Corporate Bodies

There are five diplomas or licences obtainable in the United Kingdom, granted by corporate bodies which already exercised this function at the time of the passing of the Medical Acts. The curriculum for the examinations for these diplomas is that recommended by the General Medical Council. The examinations themselves vary slightly within narrow limits, but, being under the control of a central body, the standard of the examinations may be taken to be practically the same by which ever body they are carried out.

English Double Qualification.

The diploma granted by the Royal College of Physicians of London and the Royal College of Surgeons of England is granted by the Conjoint Examining Board appointed by these two bodies, and is registered as L.R.C.P. and M.R.C.S. Candidates for the licence are required to complete five years of professional study after passing a recognised Preliminary examination, and pass three examinations: (1) The First, in chemistry, physics, elementary biology, and practical pharmacy (fee, 10*l.* 10*s.*). Practical pharmacy may be postponed till later, but the instruction "must be given by a registered medical practitioner or by a member of the Pharmaceutical Society of Great Britain, or in a public hospital, infirmary, or dispensary." (2) The Second examination, partly written, oral, and practical, in anatomy and physiology; both subjects must be passed together (fee 10*l.* 10*s.*). (3) Final Professional examination, the subjects of which are: (I.) Medicine, including medical anatomy, pathology, practical pharmacy (unless taken previously), therapeutics, forensic medicine, and public health. (It may be remarked here that in Scotland the instruction in practical pharmacy can be taken with any chemist and druggist or pharmaceutical chemist of Great Britain or pharmaceutical chemist of Ireland.) (II.) Surgery, including pathology, surgical anatomy, and the use of surgical appliances. (III.) Midwifery and diseases peculiar to women. (Fee 21*l.*) This examination may be taken in parts or the whole at one time, and the usual evidence must be produced that the candidate has attended the specified courses of study laid down in the curriculum. The regulations and synopses of examination can be had from Mr. Frederic G. Hallett, Secretary to the Conjoint Board, Examination Hall, Victoria Embankment, London, W.C. The restrictions as to the sex of candidates have been removed, but women are still not eligible for admission to the F.R.C.S. or M.R.C.P. It should be added that the diplomas of the two Colleges are granted separately, which is a convenience for University graduates who desire to specialise in either medicine or surgery, or wish to take certain hospital appointments reserved for those holding College diplomas.

Irish Double Qualification.

The diploma of Licentiate of the Royal College of Physicians and Royal College of Surgeons in Ireland (L.R.C.P. and L.R.C.S. Ireland) is granted by a Conjoint Board. The candidate must have passed a Preliminary examination in general education recognised by the General Medical Council and have been registered by that Council as a student in medicine. The recognised Preliminary examinations held in Ireland are: Principal Entrance examinations of the University of Dublin (Trinity College); Matriculation examination of the Royal University of Ireland; Conjoint examination in Arts of the Royal Colleges of Physicians and Surgeons, Ireland; examinations of the Intermediate Education Board for Ireland—Middle and Senior Grades—as far as they include the necessary subjects. The curriculum is that outlined by the General Medical Council. There are four Professional examinations to pass, which are as follows:

(1) First Professional examination, not earlier than end of first winter session (fee 15*l.* 15*s.*, or 10*l.* 10*s.* for matriculated pupils R.C.S.).

(2) Second Professional examination, not earlier than end of second winter session (fee 10*l.* 10*s.*).

(3) Third Professional examination, not earlier than end of the third year of medical study (fee 9*l.* 9*s.*).

(4) Final Professional examination, not earlier than end of fourth year of medical study, but cannot be completed till end of fifth year (fee 6*l.* 6*s.*).

The regulations of the Conjoint Board may be had from the Secretary, Committee of Management, Royal College of Physicians, Kildare Street, Dublin, from whom may also be obtained particulars of the Arts examination referred to above.

Scots Triple Qualification.

The Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Faculty of Physicians and Surgeons of Glasgow have an arrangement by which, after one series of examinations held in Edinburgh or in Glasgow, or in Edinburgh and Glasgow, the student may obtain the diplomas of the three co-operating bodies. The arrangement is in accordance with Section XIX. of the Medical Act, 1858, and has the special sanction of the General Medical Council. Students passing the Final examination are entitled to register the three diplomas—L.R.C.P.E., L.R.C.S.E., and L.F.P.&S.G. The examinations are open to both sexes. It should be noted that each of the three co-operating bodies grants single diplomas to candidates who already possess another and opposite diploma in medicine or surgery as the case may be, but these single diplomas do not confer the right to registration except as qualifications additional to those already on the register. A Preliminary examination recognised by the General Medical Council must be passed, and registration as student made, before proceeding with the curriculum, which, again, is that laid down by the G.M.C. The course of professional study occupies five winter and five summer sessions, but graduates in arts or science of any recognised University who have fulfilled certain requirements are held to have completed the first of the five years' medical study. The examinations are: (1) First Professional, in physics, chemistry, and elementary biology (fee 5*l.*). (2) Second examination, in anatomy and physiology, including histology (fee 5*l.*). (3) Third examination, in pathology and materia medica with pharmacy (fee 5*l.*). (In passing it may be noted that the two and a half months' instruction in practical pharmacy is to include not less than twenty-five meetings, which "may be attended at a medical school or public hospital laboratory or dispensary or under a registered pharmaceutical chemist or registered medical practitioner who dispenses medicines to his patients.") (4) Final examination, in medicine, including therapeutics, medical anatomy, and clinical medicine; surgery, including surgical anatomy, clinical surgery, and diseases and injuries of the eye; midwifery and diseases of women and of new-born children; and medical jurisprudence and public health (fee 15*l.*). The inspectors of certificates, who supply copies of the regulations, are Mr. Jas. Robertson, 54 George Street, Edinburgh, and Dr. A. Duncan, B.A., 242 St. Vincent Street, Glasgow.

London Apothecaries' Diploma.

The Society of Apothecaries of London grants a diploma in medicine, surgery, and midwifery—L.M.S.S.A., formerly L.S.A. For this there are two examinations: (1) Primary, in two parts—(*a*) elementary biology, chemistry, physics, and practical chemistry, materia medica and pharmacy; (*b*) anatomy, physiology, and histology. (2) Final, in two sections, the first being in three parts—(*a*) surgery, surgical pathology, and anatomy; (*b*) medicine, therapeutics, pharmacology and prescriptions, pathology and morbid histology, forensic medicine, hygiene, vaccination, and mental diseases; (*c*) midwifery, gynæcology, diseases of new-born children, and obstetric instruments and appliances. The second section is in two parts—(*a*) clinical surgery, (*b*) clinical medicine and medical anatomy. Part (*a*) of the Primary may be passed at any time after registration as a student (but note that instruction obtained before registering as a student is not recognised as part of the medical curriculum), and (*b*) after twelve months' practical anatomy. Section 1 of the Final cannot be passed earlier than forty-five months after registration, and the second section not till the end of the fifth year. The fees amount to twenty guineas. The diplomates are now designated "Licentiate in Medicine and Surgery of the Society of Apothecaries, London." The regulations and synopses of the examinations can be obtained from Mr. Frank Haydon, L.R.C.P., Secretary to the Court of Examiners, Apothecaries' Hall, Blackfriars, London, E.C.

Dublin Apothecaries' Diploma.

This qualification—L.A.H.—is granted by the Apothecaries' Hall of Ireland to those who pass the four Professional examinations in medicine, surgery, midwifery, and pharmacy. Candidates must have passed a recognised Preliminary examination in general education. The subjects of the examinations are: (1) First Professional examination—chemistry, physics, and biology (fee 5*l.* 5*s.*); (1) Second Professional examination—anatomy, physiology, and histology (fee 5*l.* 5*s.*); (3) Third Professional examination—pathology, medical jurisprudence and hygiene, materia medica, and pharmacy (fee 5*l.* 5*s.*): (4) Final Professional examination—medicine, surgery (including ophthalmic surgery), midwifery, and gynæcology (fee 6*l.* 6*s.*). The regulations and syllabus can be had from the Registrar, Apothecaries' Hall, 40 Mary Street, Dublin.

Medical Instruction.

Aberdeen.—*The University Faculty of Medicine* is at Marischal College, where complete instruction is given, clinical practice being obtained in the Royal Infirmary [230 beds] and other special institutions. Fees (including Matriculation, class and hospital fees for five years' curriculum, and fees for degrees) about 150*l.* The Dean is Dr. D. W. Finlay, and the Secretary Mr. Donaldson R. Thom, M.A., Marischal College, Aberdeen, from the latter of whom the prospectus can be obtained.

Aberstwyth.—*University College of Wales*, a constituent of the University of Wales, has powers under a supplemental Charter to confer degrees in medicine and surgery, but the regulations have not yet been drawn up. Students can take the course for the Preliminary Scientific examination for the University of London, the Scottish Universities, and the Conjoint Board. The Registrar is Mr. J. Mortimer Green.

Bangor.—*University College of North Wales.*—This is a constituent college of the University of Wales, where the preliminary scientific subjects can be taken. (See Aberstwyth above.) Address the Dean.

Belfast.—*University College* is a constituent of the newly constituted National University of Ireland. Fees (including clinical instruction), about 95*l.* Registrar, Dr. Johnson Symington, M.D., F.R.S.

Birmingham.—*University Faculty of Medicine.*—Hospital work is taken at the General and Queen's Hospitals [together 400 beds]. The courses are specially arranged for the degrees of the University, but qualify also for the degrees of other Universities and for the diplomas of licensing bodies. Fees (complete for obtaining the degrees of M.B. and Ch.B.), 154*l.* 19*s.* 6*d.* Dean, Professor Gilbert Barling, M.Sc., F.R.C.S.

Bradford.—*Technical College.*—Preliminary Scientific subjects can be taken here.

Brighton.—*Technical Day College*, for Preliminary Scientific subjects.

Bristol.—*The University Faculty of Medicine.*—Students can complete in Bristol the entire course of study required for the medical and surgical degrees of the University of London, the Conjoint Board, and the Society of Apothecaries. Clinical practice is obtained at the Royal Infirmary and General Hospital [together 470 beds]. Composition-fee for complete curriculum (including hospital practice), 139*l.* 13*s.* Dean, Professor E. Fawcett, M.D. Registrar and Secretary, Mr. James Rafter.

Merchant Venturers' Technical College, for Preliminary Scientific subjects.

Cambridge.—*University Medical School.*—Clinical practice is obtained at Addenbrooke's Hospital [172 beds]. The regulations, schedules, and lists of lectures may be obtained from the Registry of the University, Cambridge.

Girton College, Newnham College.—Is recognised for Preliminary Scientific subjects.

Cape Town.—*South African College.*—Is recognised for Preliminary Scientific subjects.

Cardiff.—*University College of South Wales and Monmouthshire*, a constituent college of the University of Wales. The first three years of the medical curriculum can be taken at Cardiff. Hospital practice is obtained at Cardiff Infirmary. Fees for students preparing for the Preliminary Scientific and the Intermediate examination of the University of London, 57*l.* 10*s.*; for the Conjoint Board (First and Second examinations), 41*l.* 10*s.* Dean of the Faculty of Medicine, Dr. D. Hepburn. For particulars apply to the Registrar, Mr. J. Austin Jenkins, B.A., University College, Cardiff.

Cheltenham.—*Ladies' University College*, for Preliminary Scientific subjects.

Cork.—*University College*, a constituent college of the National University of Ireland.—Faculty of Medicine. Clinical practice is obtained at North and South Infirmaries. The fees for the college lectures and hospital attendance required by the Royal University Hospital amount to about 85*l.*, but this does not include examination fees, which are for M.B., B.Ch., R.U.I., 17*l.*; for R.C.P.&S.I., 42*l.* Particulars from the Registrar, Professor W. F. Butler, M.A.

Derby.—*Technical College.*—Preliminary Scientific subjects can be taken here.

Dublin.—*Trinity College* (School of Physic).—Students must have matriculated before they can be admitted to the school of physic or attend dissections. Fees, 149*l.* 17*s.* Registrar, Mr. H. W. Mackintosh, M.A., Trinity College, Dublin.

Catholic University Medical School, Cecilia Street.—Minimum cost of lectures, hospitals, special courses, and examination may be put as follows: Royal University, 160*l.*; Conjoint Colleges, 160*l.*; Apothecaries' Hall, 141*l.* Registrar, Dr. E. P. McLoughlin.

Royal College of Surgeons' Schools of Surgery (which includes the Carmichael and Ledwich School).—The Schools of Surgery are attached by charter to the Royal College of Surgeons, and have existed as a department of the College for over a century. Total expense of triple qualification (including examination-fees), 160*l.* 13*s.* Registrar, Mr. G. F. Blake, St. Stephen's Green.

Dundee.—*University College.*—At this College the whole medical curriculum can be taken in connection with the University of St. Andrews (*q.v.*).

Durham.—*See* Newcastle-on-Tyne.

Edinburgh.—*University Faculty of Medicine.*—Hospital practice is obtainable at the Royal Infirmary, etc., the total number of beds available for clinical instruction of students of the University being 2,120. The fees for M.B. and Ch.B. amount to 23*l.* 2*s.* Minimum class and hospital fees, 115*l.* The syllabus can be had from the Dean, Professor D. J. Cunningham, M.D., D.Sc., or the Clerk of the Senatus.

School of Medicine of the Royal Colleges.—The courses of instruction required by the University of Edinburgh and other Universities, also the Royal Colleges of Physicians and Surgeons of Edinburgh, London, and Dublin, are obtainable here. There are special classes for women. The minimum cost of the education at this school for the triple qualification, spread over the period of study and including examination-fees, is 115*l.* The Secretary and Registrar, Mr. R. N. Ramsay, solicitor, 27 Forrest Road, Edinburgh, will supply the Calendar of the School on application.

Exeter.—*Royal Albert Memorial College*, for Preliminary Medical studies.

Galway.—*University College*, Galway, is a constituent of the newly constituted National University of Ireland. The fees of the Faculty of Medicine are the same as at Cork. Clinical teaching is obtained at the Galway Hospital. Registrar, Professor E. Townshend.

Glasgow.—The *University Medical Department* and *Queen Margaret College*, Hamilton Drive, Glasgow (School of Medicine for Women). Clinical instruction is given at the Western Infirmary [500 beds]. Fees for M.B. and Ch.B., including Matriculation, class-fees, hospital attendance, and Professional examinations, about 152*l.* Clerk of the Senate, Professor Stewart. Syllabus from Mr. W. Innes Addison, Assistant Clerk of the Senate. For information regarding the women's school address the Secretary of Queen Margaret College.

St. Mungo's College.—Medical School of Glasgow Royal Infirmary. The College buildings are situated within the grounds of the Royal Infirmary [620 beds], where clinical instruction is obtained. Fees for English and Scottish Conjoint qualifications, about 70*l.* The Carnegie Trust pays part of the fees on certain conditions. The Dean, Professor H. Galt, will supply a detailed syllabus.

Western Medical School, 44 and 46 University Avenue, Hillhead.—Lectures and demonstrations are given in chemistry, anatomy, surgery, and medicine. Some of the classes qualify for graduation and for Scotch diplomas. Secretary, Mr. J. N. Morton, M.A.

Anderson's College Medical School, Dumbarton Road.—Adjoins the Western Infirmary, where clinical instruction is obtained as well as at the Royal Infirmary. The classes qualify for all the licensing bodies in the United Kingdom and the Universities (under certain conditions). Fees for Scots triple qualification, about 70*l.* The Carnegie Trust pays the fees of students under certain conditions (apply to W. S. McCormick, Carnegie Trust Offices, Edinburgh). Calendar of the College can be had on application to Professor B. G. Cormack, Hon. Secretary Medical Faculty.

Halifax.—*Municipal Technical School* (Day Classes), for Preliminary Medical studies.

Huddersfield.—*Technical College* (Day Classes), for Preliminary Medical studies.

Hull.—*Municipal Technical School* (Day Classes), for Preliminary Medical studies.

Leeds.—The *School of Medicine* of the University Faculty of Medicine is opposite the Leeds General Infirmary [524 beds], where clinical instruction is obtained. The approximate cost of medical education to the student in the University of Leeds is 195*l.* 6*s.* (this includes composition-fee for classes 73*l.* 2*s.* 6*d.*, examination-fees, books, and microscope). Dean, Professor A. S. Grünbaum, M.D.

Leicester.—*Municipal Technical and Art School* (Day Classes), for Preliminary Medical course.

Liverpool.—At the *School of Medicine* of the University Faculty of Medicine courses of instruction are provided for the entire medical curriculum. The clinical instruction is obtained at the Royal Infirmary and other local hospitals [together 1,127 beds]. The composition-fees for the M.B. and Ch.B. amount to 84*l.* 15*s.* for University students. To this must be added the examination-fees, 5*l.* for each of the three examinations. The hospital fee is 42*l.* The composition-fees for other students is different from those stated above.

London.—The following medical schools and colleges are constituents of the University of London, where the whole or part of the instruction required for the medical degrees can be obtained:

Charing Cross Hospital Medical College, Chandos Street, W.C. [287 beds].—The approximate cost of medical education is given in the prospectus of the medical school as 219*l.* 5*s.*, this including composition-fee (120*l.* 15*s.*), examination-fees (42*l.*), books, and instruments. The complete medical course can be taken here. The Dean is Mr. F. C. Wallis, from whom further information regarding the medical school can be obtained.

Guy's Hospital, London Bridge, S.E. [608 beds].—Fees about 160*l.* There is a residential college in connection with the medical school. Dean, Dr. H. L. Eason.

King's College Hospital Medical School, Lincoln's Inn, W.C.—Fees for the course for the Final examinations, either for the M.B., B.S., of the University of London, or for the diplomas of the R.C.P. and R.C.S., 73*l.* 10*s.* Preliminary and intermediate portions are taken at King's College, but composition-fee can be arranged, 147*l.* for University course, 141*l.* 15*s.* for Conjoint course. Dean, Mr. Peyton T. B. Beale, F.R.C.S.

King's College, Faculty of Science (Medical Division), Strand, W.C.—Fees for the University of London courses: Preliminary Scientific, Part I., 26*l.* 5*s.*; Inter.M.B. and Pre.Sc., Part II., 57*l.* 15*s.* The Conjoint Board course fees are: First examination 21*l.*, second examination, 57*l.* 15*s.* Dean of the Faculty of Science (Medical Division), Professor Peter Thompson, M.D.

London Hospital, Mile End, E. [922 beds].—Fees, 126*l.*, or 136*l.* 10*s.* in instalments (sons of medical men 15*l.* 15*s.* less). Is the largest accident hospital in the world. Warden, Mr. Munro Scott, Turner Street, Mile End, E.

London (Royal Free Hospital) School of Medicine for Women, 8 Hunter Street,, Brunswick Square, W.C.—Fees: Course for University of London degree—First medical examination, 25*l.*; second and third examination and hospital practice, 135*l.*; third examination only, with hospital practice, 85*l.* Intermediate and Final M.B. Lond. course, including hospital practice, 135*l.*, or 145*l.* in four instalments. The prospectus of the school gives the fees for the entire courses for those medical degrees open to women. Dean, Miss J. A. H. Cock, M.D.

Middlesex Hospital, Cleveland Street, W. [297 beds].—Fees for curriculum required by University of London, 152*l.* 5*s.*; Conjoint Board, 147*l.* Dean, Mr. H. Campbell Thomson, M.D.

St. Bartholomew's Hospital and College, West Smithfield, E.C. [744 beds].—Fees, 47*l.* 5*s.* annually for four years or a single payment of 173*l.* 5*s.* The complete course (preliminary, scientific, intermediate, and hospital practice) can be taken at this College. There are several entrance scholarships in science and general education, while the total value of scholarships and prizes awarded annually is about 900*l.* New buildings, extending the hospital and containing additional accommodation for the medical college, have recently been erected. Dean, Dr. T. W. Shore, B.Sc.

St. George's Hospital, Hyde Park Corner, S.W. [440 beds], with a convalescent branch at Wimbledon.—This is now a purely clinical school. Students who enter for the full course carry out their preliminary studies through London University at either King's College or University College. Fees: annual composition-fee, 31*l.* 10*s.*; clinical students, entrance-fee, 10*l.* 10*s.* There are several entrance scholarships at this hospital. Dean, Dr. E. I. Spriggs.

St. Mary's Hospital, Cambridge Place, Paddington, W. [281 beds].—Fees for full curriculum for Conjoint Board 140*l.*, or for University degrees 145*l.*, which may be paid in instalments. Entrance scholarship examinations will be held on September 21 to 23. Sir John Broadbent, M.D., will deliver the introductory address at the opening of the winter session on October 1. Dean, Mr. W. H. Clayton Greene, M.B., B.C., F.R.C.S.

St. Thomas's Hospital, Albert Embankment, S.E. [603 beds].—Fees for Preliminary subjects, 15*l.* 15*s.* per annum; second-year students, entrance 21*l.*, annual fee 31*l.* 10*s.*; fourth-year students (after second M.B.), entrance 10*l.* 10*s.*; annual fee 31*l.* 10*s.* Dean, Mr. Cuthbert Wallace, M.B., M.S. Secretary, Mr. G. Q. Roberts, M.A.

University College, Faculty of Medical Sciences, Gower Street, W.C.—Courses of instruction are given for the Preliminary Scientific and the Intermediate examination in Medicine of the University of London, as well as for the corresponding examinations of the Examining Board of the R.C.P. and R.C.S. and other licensing bodies. After these courses have been taken the student enters a medical school and hospital (*see* University College Hospital Medical School). Provost, Mr. T. Gregory Foster. Secretary, Mr. Walter W. Seton.

University College Hospital Medical School, University Street, Gower Street, London, W.C. [303 beds].—Fees: Preliminary Scientific course at University College, 27*l.* 1*s.*, intermediate course at University College, 60*l.* 18*s.*; final M.B. course, or Conjoint Board, at this medical school, 84*l.* Dean, Dr. H. Batty Shaw. Secretary, Mr. L. R. Thomas.

Westminster Hospital Medical School, Broad Sanctuary and Caxton Street, S.W. [215 beds].—Fees: Course for examinations of Conjoint Examining Board, 120 guineas, or 144 guineas in six instalments. Dean of the School, Mr. E. Rock Carling, F.R.C.S. Information can also be had from Mr. W. Fryer, the Secretary of the Medical School.

Instruction in either or both Preliminary and Intermediate courses of medical study is also given at the *Bedford College*, York Place, Baker Street, London, W.; *Royal Holloway College*, Englefield Green, Surrey; *Royal College of Science*, South Kensington, S.W.; *Birkbeck Institute; East London Technical College; Central Technical College; Westfield College; Polytechnic Institute*, and *Battersea Polytechnic* (Day Classes). There are also several special post-graduate colleges in London.

Manchester.—*Victoria University Faculty of Medicine.*—Clinical practice is obtained at the Royal Infirmary [592 beds]. Fees for M.B., 128*l.* 5*s.*, exclusive of special courses. Dean, Professor W. Stirling, M.D.

Newcastle-on-Tyne.—*University of Durham College of Medicine.*—Clinical instruction is given at the Royal Victoria Infirmary [400 beds]. Fees: 75*l.* 12*s.* (payable to the Secretary) and hospital-fees 32*l.* 11*s.* (payable to Dr. H. B. Angus). The Secretary is Professor R. Howden.

Nottingham.—*University College*, for Preliminary Scientific studies.

Oxford.—The medical curriculum at *The University* generally extends over a period of seven years, but can be shortened to six years in the case of students who are able to pass the Preliminary Chemistry and Physics examinations at the end of their first term. The instruction in natural science is carried on for the most part at the Museum. The clinical work is taken at a metropolitan or provincial medical school. Students entering the University for the purpose of medical study should interview Dr. W. Osler, the Regius Professor of Medicine at the University Museum.

Plymouth.—*Municipal School of Science* (Advanced Day Classes), for Preliminary Scientific course.

Preston.—*Harris Institute*, for Preliminary Scientific course.

Reading.—*The College*, for Preliminary Scientific course.

St. Andrews.—*The University Faculty of Medicine.*—The whole curriculum may be taken in University College, Dundee, or the first two years in the United College, St. Andrews, and the remaining three years at the University College, Dundee. The clinical practice is obtained at the Dundee Infirmary [400 beds]. The fees for the complete course, exclusive of examination-fees, amount to about 120*l.* Dean, Dr. C. R. Marshall, M.A. Secretary and Registrar, Mr. Andrew Bennett.

Sheffield.—*University Faculty of Medicine.*—Composition-fee, 80*l.*; hospital practice (Royal Infirmary and Royal Hospital, 427 beds), 36*l.* 15*s.* There are also extra fees for pharmacy, vaccination, and instruction in anæsthetics. Dean, Professor J. M. Beattie, M.D.

Southampton.—*Hartley College*, for Preliminary Scientific course.

Swansea.—*Technical College* (Day Classes), for Preliminary Scientific course.

Besides the Medical examinations mentioned there are competitions for admission to the Royal Army Medical Corps (information is obtainable from the Director-General of the Army, Medical Department, War Office, Whitehall, S.W.), the Indian Medical Service (apply to the Military Secretary, India Office, S.W.), and the Medical Department of the Royal Navy (particulars from the Director-General of the Medical Department, Admiralty, 18 Victoria Street, Westminster, S.W.). In all these cases candidates must be qualified medical men to begin with, the extra instruction required being in such subjects as tropical diseases, military surgery and administration, and naval hygiene.

There are, in addition, many post-graduate courses of study that may be taken before the graduate goes out into the world to get that experience in medical practice without which his qualification is of little account in the eyes of the public. The study of the homœopathic method of treating disease—essentially a post-graduate task—is studied in special hospitals.

Dentistry.

As a profession dentistry offers several advantages, the principal being that although many men enter it every year the profession is not yet overcrowded. The fact is that it is only within the present generation that the public have come to appreciate the services of a dentist. Formerly the only remedy for any ills of the teeth was to extract the offending tooth: now, however, such a practice would be looked upon by educated persons as nothing less than barbarism. Every effort is made to conserve the tooth, and when at last extraction is inevitable the dentist, with infinite patience, fashions an artificial tooth and so cunningly fixes it in the mouth that the wearer in a short time is almost unconscious that he has lost the natural tooth. The profession of dentistry is best taken up by those who have a taste for delicate mechanical operations, the making and fitting of a denture calling for great skill in mechanics. There is, in fact, as much of the workshop as of the surgery in dentistry, and this should be borne in mind when the time comes to choose a profession for a young man or woman.

The Practice of Dentistry

is regulated by the General Medical Council under the Dentists Act, 1878, and there are dental representatives on the Council. This association of dentists with medical men has raised the status of the dental profession, but it has helped to give the impression among the public that dentists are too expensive to be consulted except on rare occasions. This has driven some of the practice to unqualified men,

who, being free to advertise their work and charges, have secured the advantages of publicity denied to the professional man. Lest this assertion should be misconstrued, we ought to add that as a rule dental charges are reasonable and the work of the qualified men much superior. There is no doubt that the demand for skilled dentistry will continue to increase, and that many more qualified men are needed to fill the present demand.

To Become a Dentist.

The preliminary steps are similar to those required for the medical profession; and, as in the last-named profession, qualifications to practise can be conferred by degrees or diplomas. The requirements for the preliminary Arts examination are the same as for the medical profession (see p. 301), while to the student who intends to take a degree a University Matriculation is necessary. Probably 90 per cent. of dental students take the College of Preceptors' Professional examination or that of the Educational Institute of Scotland, about which particulars are given on p. 294. Registration as a dental student must be effected as soon as a recognised Preliminary examination has been passed, because, as in the case of the medical student, no part of the professional education taken before registration counts as part of the curriculum.

Professional Education.

The dental curriculum may be divided into (1) preliminary science education, and (2) professional study, and the latter into (*a*) mechanical dentistry and (*b*) lectures and hospital practice, the whole extending to four years. The instruction in preliminary science, chemistry, and physics, with laboratory-work, occupies six months, and may be taken at a science school recognised by one of the licensing bodies. These schools are to be found in all large towns, and are indicated in the section dealing with medicine. Three examinations have to be passed—Preliminary Science, the First Professional, and the Second Professional examinations. The following certificates of professional study have to be produced before admission to these examinations:

Preliminary Science Examination.—Of having received instruction at a recognised institution in chemistry and physics. There must not be less than 180 hours' instruction and laboratory work in chemistry and 120 hours' instruction and laboratory work in physics. These courses may be commenced before the student passes the Preliminary examination in general education, and need not be completed in one year nor run concurrently.

First Professional Examination.—(1) Of not less than two years' instruction in mechanical dentistry. (2) Of registration as a dental student. (3) Of having attended at a recognised dental hospital and school: (*a*) a course of lectures on dental metallurgy; (*b*) a course of practical dental metallurgy; (*c*) a course of lectures on dental mechanics; (*d*) a course of practical dental mechanics, including the manufacture and adjustment of six dentures and six crowns.

Second Professional Examination.—(1) Of having been four years in the acquirement of professional knowledge, subsequent to date of registration. (2) of having attended at a recognised hospital and school: (*a*) a course of dental anatomy and physiology: (*b*) a separate course of dental histology, including the preparation of microscopical sections; (*c*) a course of dental surgery; (*d*) a separate course of practical dental surgery; (*e*) a course of not less than five lectures on the surgery of the mouth; (*f*) a course of dental bacteriology; (*g*) a course of dental materia medica. (3) Of having attended at a recognised hospital the practice of dental surgery during two years. (4) Of having attended at a recognised medical school: (*a*) a course of lectures on anatomy; (*b*) a course of lectures on physiology; (*c*) a separate course of practical physiology; (*d*) a course of lectures on surgery; (*e*) a course of lectures on medicine. (5) Of having performed dissections at a recognised medical school during not less than twelve months. (6) Of having attended at a recognised hospital or hospitals the practice of surgery and clinical lectures on surgery during two winter sessions. (7) Of being twenty-one years of age.

Professional Examinations.

1. The *Preliminary Science Examination* consists of chemistry and physics, and candidates must have the required Preliminary examination certificates, and must pass both subjects together. They may go in for this examination before entering a dental school.

2. The *First Professional Examination* consists of mechanical dentistry and dental metallurgy. Candidates must have passed Preliminary Science examination and have the certificates of attendance at lectures, &c. The dental metallurgy examination is by written paper.

3. The *Second Professional Examination* consists of:

Part I.—General anatomy and physiology,
General pathology and surgery.
Part II.—Dental anatomy and physiology,
Dental pathology and surgery,
Practical dental surgery.

The two parts may be taken separately or together. The examination is partly written, partly practical, and partly oral. The written examination comprises general anatomy and physiology, general pathology and surgery, dental anatomy and physiology, and dental pathology and surgery. At the Practical examination candidates may be examined on the treatment of dental caries, they may be required to prepare and fill cavities with gold, inlay, or other materials, or to do any other operation in dental surgery, also on the mechanical and surgical treatment of the various irregularities of children's teeth. The oral examination in each part comprises the several subjects above mentioned.

The fee for the diploma of the licence in dental surgery is twenty guineas, and is payable in the following manner:

	£	s.	d.
Preliminary Science examination, each admission	3	3	0
First Professional examination, each admission	2	2	0
Second Professional examination, Part I. ...	2	2	0
Second Professional examination, Part II. ...	3	3	0
Amount payable before grant of diploma ...	10	10	0
	£21	0	0

The above requirements are those of the Royal College of Surgeons of England, and are similar in the main to those of other colleges granting diplomas.

Royal College of Surgeons, Edinburgh.—Two examinations are taken during the collegiate curriculum—viz., *First*, in anatomy, chemistry, physics, and physiology; *Second*, surgery, medicine, dental therapeutics, dental anatomy and physiology, dental surgery and pathology, dental mechanics and dental metallurgy. Fees, 15*l.* 15*s.* *Address*: Mr. D. L. Eadie, 54 George Square, Edinburgh.

Faculty of Physicians and Surgeons, Glasgow.—The examinations and fees are much the same as in Edinburgh. *Address*: Mr. A. Duncan, B.A., LL.D., 242 St. Vincent Street, Glasgow.

Royal College of Surgeons in Ireland.—There are two professional examinations—the Primary and the Final dental examinations—the subjects and conditions being as prescribed by the General Medical Council. Fees, 21*l.* The fees for the curriculum are about 80*l.* The Preliminary Arts examination of the Conjoint Board in Ireland can be taken by dental students. The Council have power to admit to examination *sine curriculo* candidates whose names are on the Dental Register. *Address*: The Registrar, Royal College of Surgeons, Stephen's Green, Dublin.

The probable cost of qualifying for the L.D.S. examination, including class fees, pupilage, instruments, etc., may be put at from 180*l.* to 250*l.* In this respect the different dental hospitals and schools vary as regards the amount charged for fees for lectures, examinations, etc. The intending student will be influenced in his choice of a school by various considerations.

University Qualifications.

We shall here briefly indicate the conditions regulating the granting of University degrees and diplomas.

Birmingham.—The University confers the degrees of bachelor and master of dental surgery (B.D.S. and M.D.S.) and a diploma in dental surgery (L.D.S.). The curriculum for the diploma in dental surgery extends over four years, and that for the degree of B.D.S. over five years from the date of registration as a dental student. The total cost for the L.D.S. curriculum, including hospital and examination fees,

is 112*l.* 13*s.*, and that for the B.D.S. 146*l.* 19*s.* The M.D.S. degree can be taken by thesis twelve months later. Mr. John Humphreys, M.D.S., is the Hon. Secretary of the Dental Department.

Durham.—A diploma in dental surgery has been instituted at the University of Durham College of Medicine, Newcastle-on-Tyne. The curriculum is similar to that required for the English diploma. The fees for the four examinations amount to 12*l.*, to which must be added 3*l.*, the charge for the diploma. Clinical practice is taken at the Royal Victoria Hospital, Newcastle-on-Tyne.

Leeds.—In the University School of Dentistry the diploma in dental surgery (L.D.S.) is granted on the General Medical Council's conditions. The courses of instruction must be approved by the University. The examinations are similar to those of the Royal College. Degrees of bachelor of dental surgery (B.Ch.D.) and master of dental surgery (M.Ch.D.) are also granted. For the former candidates must pass the Matriculation examination of the University, and thereafter pursue approved courses of study for not less than five academic years (two of them in the University subsequent to the First examination) and complete the pupilage or hospital attendance, or both, as prescribed by the University. Clinical practice is obtained at the Leeds Public Dispensary and the Leeds General Infirmary. There are three Professional examinations, the G.M.C. subjects being included. Composition-fee for requisite courses, 60*l.* and 65*l.* respectively. The approximate cost of professional education to the dental student in the University of Leeds is put down at 298*l.* 15*s.* 6*d.* for degree and 272*l.* 15*s.* for diploma. Professor A. S. Grünbaum is Dean of the Faculty of Medicine.

Liverpool.—At the University School of Dental Surgery the dental degrees are B.D.S. and M.D.S., and examinations are also held for the L.D.S. diploma. Clinical practice is taken out at the Liverpool Dental Hospital, which is being rebuilt near the University. The fees for the L.D.S. Liverpool are 58*l.* 10*s.*, of other licensing bodies 61*l.* 10*s.* Two years' instruction in mechanical dentistry and two years' dental hospital practice costs 100*l.* For the B.D.S. degree the lecture-fees are 67*l.* 10*s.*, and the clinical practice costs 126*l.* For the M.D.S. extra courses are required, for which a composition-fee of 13*l.* 13*s.* is charged. The general hospital practice, for which a fee of 10*l.* 10*s.* is charged, is required in addition to each of the above composition-fees. Mr. W. H. Gilmour, M.D.S., is the Secretary of the Board of Dental Studies.

Manchester. The Dental Department of the University is arranged for instruction of students for the B.D.S. and M.D.S. degrees and the dental diplomas of the University, Royal College of Surgeons, and other licensing bodies. Any Preliminary examination accepted by the General Medical Council suffices for the diploma in dental surgery, but for the degree the Matriculation examination of the University or some equivalent accepted by the Joint Matriculation Board is required. The degree cannot be obtained until five years after registration as a dental student. The M.D.S. may be conferred not less than one year after attaining the B.D.S., either (*a*) on presentation of a dissertation or (*b*) on examination. The clinical practice is obtainable at the Victoria Dental Hospital. The composition-fees for the B.D.S. is 63*l.*, for the L.D.S. Liverpool diploma 57*l.* 15*s.*, for the L.D.S. England 63*l.* The fees payable at the Dental Hospital are 130*l.* (for B.D.S.) or 100*l.* (for L.D.S.). Fees for the conferment of the degree or registration of the diploma and payment for chemical apparatus are extra. Professor William Stirling, Dean of the Medical Faculty, should be addressed for further particulars of the Dental Department.

Dublin.—For the degree (M.Dent.Sc.) it is necessary to be B.A. of Dublin, to study at the University medical or dental school, and to pass two Professional examinations. The L.D.S. conditions are similar to those in England.

Dental Institutions.

The following brief notes refer to the dental colleges and hospitals where the whole or part of the professional instruction, as approved by the various licensing bodies, can be obtained. Fuller particulars can always be had by addressing the Dean or Secretary of the institution.

Birmingham.—University Dental Department and Dental Hospital.

Bristol.—University Faculty of Medicine, Dental Department, Royal Infirmary, and General Hospital.

Dublin.—School of Dentistry in connection with the Incorporated Dental Hospital of Ireland, Lincoln Place. Dean: Dr. A. W. W. Baker.

Edinburgh.—Dental Hospital and School, 31 Chambers Street. Dean, Mr. William Guy, 11 Wemyss Place.

Glasgow.—Dental Hospital and School, 15 Dalhousie Street. Dean, Mr. J. M. Macmillan. Secretary, Mr. D. M. Alexander, 97 West Regent Street.

Leeds.—University School of Dentistry.

Liverpool.—University Dental Department and Dental Hospital.

London.—*Charing Cross Hospital Dental Department*, Chandos Street, W.C.—Composition-fee for dental students (two years' curriculum), 57*l.* 15*s.* in one sum or 65*l.* 2*s.* in two instalments. Dean, Mr. Christopher Addison.

Guy's Hospital Dental School, London Bridge, S.E.—The fees for dental lectures and demonstrations and dental practice only, as required for L.D.S.Eng., are 50*l.* Inclusive fee for students entering for the course of instruction for the L.R.C.P., M.R.C.S., and L.D.S.Eng. is 199*l.* 10*s.* Instruction in dental mechanics is 52*l.* 10*s.* per annum. The complete curriculum for the L.D.S. can be taken here. The Dean is Dr. H. L. Eason.

Institute of Dental Technology and School of Mechanical Dentistry, 4 Langham Chambers, All Souls' Place. W. Principal, Mr. Geo. Cunningham, M.A.

King's College, Strand, W.C.—Composition-fee for dental students is 63*l.* Hospital work for one year, 10*l.* 10*s.* Dean, Mr. Peyton T. B. Beale.

London Hospital, Mile End, E.—Composition-fee, 42*l.* Mr. Munro Scott, Warden.

Middlesex Hospital, Berners Street, W.—Composition-fee, 56*l.* 14*s.* Dean, Mr. J. Murray.

National Dental Hospital and College, Great Portland Street, W.—Fees for complete curriculum, 40*l.*; for three years' mechanical training, 50*l.* per annum; composition-fee (including two years' pupilage, hospital practice, and lecture, but not including medical subjects), 120*l.* The cost of hospital education, including general hospital practice, may be put at 150*l.*, this including books and instruments, and 21*l.* for the diploma. It does not include pupilage. Dean, Mr. Sidney Spokes.

Royal Dental Hospital of London and *London School of Dental Surgery*, Leicester Square, W.C.—Fees for instruction in mechanical dentistry and the two years' hospital practice and lectures for L.D.S., 150*l.*; for the two years' hospital practice and lectures, 53*l.* 3*s.* The approximate cost of education for the diploma is stated in the prospectus to be 230*l.* 14*s.* (this includes fees, books, and instruments). Dean, Mr. J. F. Colyer, M.R.C.S., L.R.C.P., L.D.S.

St. Bartholomew's Hospital, Smithfield, E.C.—Fees for general subjects for dental students, 52*l.* 10*s.* Dean, Mr. T. W. Shore.

St. George's Hospital, Grosvenor Place, S.W.—Dean, Mr. F. Jaffrey.

St. Mary's Hospital, Paddington, W.—Fee for general hospital practice and lectures for L.D.S.Eng., 52*l.* 10*s.* Dean, Mr. H. A. Caley.

St. Thomas's Hospital, Albert Embankment, S.E.—Dean, Mr. J. H. Fisher.

University College, Gower Street, W.C.—Composition-fee for L.D.S., 68*l.* 5*s.*, or without chemistry, physics, and materia medica, 52*l.* 10*s.* Dean, Mr. Sidney Martin.

Westminster Hospital, Broad Sanctuary, S.W.—Fees for the general surgical practice and lectures for the L.D.S. Eng., 52*l.* 10*s.* Dean, Mr. E. P. Paton.

Manchester.—University Dental Department and Victoria Dental Hospital.

Newcastle-on-Tyne.—Durham College of Medicine, Royal Infirmary and Dental Hospital.

Sheffield.—University Dental Department. Dental practice is obtained at the Royal Hospital. Students enter for the diploma of the Royal College of Surgeons.

Veterinary Surgery.

The regulation of the practice of veterinary surgery is entrusted by the Veterinary Surgeons Act, 1881, to the Royal College of Veterinary Surgeons, Red Lion Square, London, W.C., a corporate body to which a charter was granted in 1844. It is the only institution in this country with the power to grant licences to practise veterinary surgery. The College is an examining body: it does not carry on educational work. The latter is provided by veterinary colleges in London, Edinburgh, Dublin, Glasgow, and Liverpool, and the examinations are held in London and the provinces. The Royal College requires candidates for the diploma M.R.C.V.S. to pass an examination in general knowledge recognised by the General Medical Council, and the list of approved examinations which the Royal College conducts is the same as that of the General Medical Council. In England the Medical Preliminary examination of the College of Preceptors, and in Scotland the Educational Institute examination

are those which veterinary students usually enter for. After passing the examination the student has to enter on a definite course of study at a veterinary college and pass an examination at the end of each college year, the Final not until he reaches the age of twenty-one. The subjects of the curriculum are indicated by the following outlines of the examination subjects :

First or "*A*" *examination* subjects are—

1. Anatomy of the domesticated animals: bones, ligaments, joints.
2. Chemistry and elementary physics.
3. Biology: Elementary zoology and botany.

To be taken at the end of the first year.

Second or "*B*" *examination* subjects are—

1. Anatomy of the domesticated animals.
2. Histology and physiology.
3. Stable management, the manipulation of the domesticated animals, and the principles of shoeing.

To be taken a year after "A."

Third or "*C*" *examination* subjects are—

1. Morbid anatomy, pathology, and bacteriology.
2. Materia medica, pharmacy, therapeutics, and toxicology.
3. Veterinary hygiene and dietetics.

To be taken a year after "B."

Fourth or "*D*" *examination* subjects are—

1. Principles and practice of veterinary medicine and clinical medicine.
2. Principles and practice of veterinary surgery, clinical surgery, obstetrics, and shoeing.
3. Meat inspection.

To be taken a year after "C" and when the candidate is twenty-one.

It will be seen that the curriculum extends for four years, and that during this time four examinations must be passed. The fee for each examination is 5*l*. We indicate below where courses of instruction can be obtained : these necessarily follow the curriculum laid down by the Royal College of Veterinary Surgeons.

The examination for the Fellowship of the Royal College of Veterinary Surgeons can only be taken by members who have held the diploma for five years. A thesis has to be presented and defended before the Board of Examiners, and, in addition, there is a written and practical examination in veterinary medicine and surgery, pathology and bacteriology, hygiene and sanitary science.

Veterinary Degrees.

The London University grants the degree B.Sc. in veterinary science. Candidates must pass the Matriculation examination of the University, which, of course, entitles them to commence their professional studies for the M.R.C.V.S. ; and subsequently they are required to study for four years, passing a Preliminary examination in inorganic chemistry and physics, an Intermediate in organic chemistry, biology, veterinary anatomy, and veterinary physiology, and at the end of the four years a Final examination in veterinary pathology and veterinary hygiene. Similar degrees are granted by the Universities of Edinburgh and Glasgow, the University of Manchester grants a diploma in veterinary State medicine, and the Liverpool University grants a diploma in veterinary hygiene. The Irish University has not yet announced that degrees in veterinary science will be granted. These degrees are only granted to those who hold the registrable qualification to practise veterinary medicine.

Teaching Colleges.

The following are the institutions where can be obtained veterinary instruction suitable for candidates for the M.R.C.V.S. diploma :

London.—*Royal Veterinary College* (founded 1791; incorporated 1875), Great College Street, Camden Town, London. N.W.—Educational fee, 84*l*., paid in four instalments, and 2*l*. 12*s*. 6*d*. library fees. There are also fees for occasional students as follows: Anatomy, 8*l*. 8*s*.; botany, 3*l*. 3*s*.; chemistry, 5*l*. 5*s*.; pathology, 5*l*. 5*s*.; physiology, 5*l*. 5*s*.; practical chemistry, 3*l*. 3*s*.; practical histology, 3*l*. 3*s*.; practical pathology, 5*l*. 5*s*.; surgery, 5*l*. 5*s*.; and veterinary medicine, 5*l*. 5*s*. Principal and Dean, Professor Sir John McFadyean, M.R.C.V.S. Secretary, Mr. R. A. N. Powys.

Dublin.—*Royal Veterinary College of Ireland*, Pembroke and Shelbourne Roads, Dublin.—Fees, 21*l*. per session, with 1*l*. 1*s*. entrance-fee. Principal, Professor A. E. Mettam, B.Sc., M.R.C.V.S.

Edinburgh.—*Royal (Dick) Veterinary College*, Clyde Street, Edinburgh (founded 1823). Entrance and class fees, 58*l*. 16*s*., in four payments, with an extra fee of 5*l*. 5*s*. for students returning for a portion of the fourth year's class. The Carnegie Trust pays students' fees at this College if the conditions laid down by the trustees are fulfilled. Principal, Professor J. R. U. Dewar, F.R.C.V.S. Secretary, Mr. Robert Anderson, S.S.C.

Glasgow.—*Glasgow Veterinary College* (established and incorporated 1862), Buccleuch Street, Garnethill, Glasgow. Fee, 60*l*., or 63*l*. in instalments. The Carnegie Trust pays the fees of students who fulfil the conditions. Principal, Professor J. McCall, F.R.C.V.S. Secretary, Mr. Wales.

Liverpool.—*University Veterinary School* (formerly the New Veterinary College founded in Edinburgh by the late Professor Williams).—Fees for four years' lectures and all other instruction, 75*l*. 12*s*., payable in four instalments of 18*l*. 18*s*. Principal, Professor W. Owen Williams.

Science.

The Profession of Analytical Chemist.

The pharmaceutical curriculum provides admirable training for those who desire to enter the portals of professional chemistry in the domain of the control of food and drug supplies, and many students of pharmacy, after securing the pharmaceutical qualification, proceed to take a Science degree or the Institute of Chemistry examinations. The title of "analyst" is not protected—at present anyone may set up in practice as an analyst uncontrolled by statutory conditions. The consulting chemist, however, in addition to undergoing a long and special training, must be endowed with good business facilities if his practice is to become a paying concern ; while there are restrictions to holding positions as public analysts under the Sale of Food and Drugs Acts and the Fertilisers and Feeding-stuffs Act—the holder of such appointments must be a Fellow of the Instituto of Chemistry. The Associateship or the Fellowship of the latter Institution is important from a technological point of view, while the Science degree is useful in academical work : each sheds a lustre on the other. A collegiate course is almost essential. Suitable preliminary certificates should be obtained before entering upon a definite course of training, and if the College is not affiliated to a University, a University Matriculation examination should be passed, with the object of proceeding to a degree in Science, and also to secure registration as a student at the Institute of Chemistry. The B.Sc. degrees of the University of London and of the Royal University of Ireland may be obtained without recourse to a college curriculum, and if taken in the requisite subjects the graduate is eligible for admission to the Intermediate examination of the Institute of Chemistry. With these exceptions, a definite curriculum covering a minimum of three years is necessary, although there are a few institutions which grant diplomas after a two-years' course. We now proceed to give details of the method by which the hall-marks of analytical ability can be attained.

Chemistry.

The Institute of Chemistry of Great Britain, 30 Bloomsbury Square, London, W.C., was founded for the better education of persons desirous of becoming analysts or chemical advisers, to grant certificates of competency to suitable persons, and to elevate professional chemistry by setting up a high standard and insisting upon the observance of strict rules of professional conduct. The Fellowship of this Institute (F.I.C.) differs from that of the Chemical Society (F.C.S.) in being a qualification. For the latter the testimony of five Fellows of the Chemical Society, in support of an application on account of interest in chemistry, is the essential requirement. In the short outline which follows, the conditions to comply with the regulations of the Institute of Chemistry for its Fellowship are given.

To register as a student, the candidate must be seventeen years old, but registration is not essential. It is an advantage to register, as a student, on entry for an examination, so as to comply with the requirements in force at the commencement of his studentship. Latin is not an essential in the

Preliminary certificate. A list of approved certificates is given in the Institute's book of regulations, which includes all other information regarding the examinations; price 1*s.*, from the Registrar at the above address. The student's annual registration-fee is 5*s.* Two courses of further procedure are available. The student may study for three years at an approved college, or become a pupil for two years with a F.I.C., and go to college for two years only. The majority of the technical institutions, as well as many Universities, provide courses of instruction approved by the Institute.

Before the student is allowed to enter for the *Intermediate Examination*, he must satisfy the Council that he has undergone a course of instruction, in accordance with the regulations, in theoretical and practical chemistry, physics, mathematics, and a fourth subject selected from the following: Higher physics, advanced mathematics, mechanics or chemical engineering, metallurgy, geology and mineralogy, physiology, bacteriology, agriculture, elementary botany, or elementary biology. The fee for the Intermediate examination is 5*l.* 5*s.* The holder of a degree in Science is exempt from the above course of training, provided chemistry and mathematics were taken as subjects for the degree and mathematics in either the Final or Intermediate examinations; while candidates taking first or second class Honours, or obtaining special distinction in chemistry for the Final examination of an approved University, can, generally speaking, be admitted directly to the Final examination of the Institute.

All candidates must pass the *Final examination* (fee 5*l.* 5*s.*, or for candidates exempted from the Intermediate examination 10*l.* 10*s.*). In addition to a general knowledge of all branches of chemistry, special knowledge is required in the one branch for which the candidate enters—viz., mineral chemistry, metallurgical chemistry, physical chemistry, organic chemistry, analysis of food, drugs, and water (including a compulsory examination in therapeutics, pharmacology, and microscopy), or biological chemistry. Candidates for the chemistry of food and drugs, etc., which is recognised by the Local Government Board for appointments as public analysts, are now required to produce evidence of training in elementary botany. Candidates in the branch of biological chemistry must show that they have taken a course of elementary biology. After January 1, 1910, all candidates for the Final examination will be required to translate French and German technical literature into English, with the aid of dictionaries, to the satisfaction of the examiners.

The candidate on passing this examination is granted an annual certificate of the Associateship of the Institute of Chemistry, the Fellowship being conferred three years later if evidence be produced that the Associate has during that time been continuously engaged in analytical chemistry. Associates or Fellows are allowed to enter for further examinations in any of the following branches only : (1) Food and drugs, to qualify for public analyst, fee 5*l.* 5*s.*; (2) biological chemistry, fee 5*l.* 5*s.*; (3) special examination in technological chemistry, for which practical technological training is required in the branch selected—either in gas-manufacture, steel-manufacture, or the fat and oils industry —fee 3*l.* 3*s.* Special certificates are given to candidates who pass these examinations, but in all other cases annual certificates are issued.

The Imperial College of Science and Technology, incorporated in 1907, comprises a group of associated colleges at South Kensington. Its purposes are to give the highest specialised instruction, and to provide the fullest equipment for the most advanced training and research in various branches of science, especially in its application to industry. The governing body carries on the work of the Royal College of Science, the Royal School of Mines, and may establish other institutions or departments of instruction. The City and Guilds College (formerly known as the Central Technical College) is to be an integral part of the Imperial College. Candidates for admission to the college's first year course must be over seventeen years old, and show that they have (1) received a general education equivalent to the standard usually marked by the University Matriculation ; (2) an adequate scientific training fitting them to enter upon the course they desire. Candidates for other courses must show a correspondingly higher standard of scientific training. Diplomas are awarded at the several constituent colleges in one or more departments. The diplomas of A.R.C.S. is issued after three years' satisfactory study in mechanics, physics, chemistry, botany, zoology, and geology, but the conditions are subject to revision in regard to the session 1910-11 and after. The A.R.S.M. is now granted (unless entry was made in 1906 or 1907) after a satisfactory four-years' course of study in mining and metallurgy. The diploma of A.C.G.I. will be awarded until further notice by the Council of the City and Guilds of London Institute. In civil and mechanical engineering, electrical engineering, or chemistry, the diploma of the Imperial College of Science and technology will be awarded on the satisfactory completion of two years' study in advanced science or technology at the Imperial College, or approved institutions of equal rank. The Calendar of the Imperial College can be obtained from the Secretary, Exhibition Road, London, S.W., price 6*d.*

The City and Guilds of London Institute.—The *Central Technical College*, Exhibition Road, London, S.W., forms the Engineering Section of the Imperial College of Science and Technology. The subjects for the Matriculation examination are mathematics and mechanics, English, French, or German, mechanical drawing, physics, and chemistry. Although only two of the last three subjects are required and a modern language in addition to the other compulsory subjects, it is becoming necessary for candidates to satisfy the examiners in *all* the subjects, as the examination for entry is well competed for. The diploma course covers a period of three years, and is in chemistry, civil and mechanical engineering, and electrical engineering. Opportunities are given for original research and the application of pure science to industrial purposes.

The *Finsbury Technical College* of the Institute admits day students who pass an examination in English and mathematics or who hold a University Matriculation certificate including these subjects. The College embraces the following departments : Mechnical engineering and applied mathematics, electrical engineering and applied physics, industrial and technical chemistry, and applied art. College certificates are awarded to students who have attended the courses regularly and passed the class examinations. Evening classes are also held at this College, which is situated in Leonard Street, Finsbury, London, E.C.

Degrees in Science.

A curriculum of not less than three academical years is required by practically all Universities in the United Kingdom. The University of London and the Royal University of Ireland provide the exceptions.

At the *University of London* one year must intervene between the Matriculation examination and the Intermediate examination. For the latter, four subjects selected from the following seven must be taken : Pure mathematics, applied mathematics (mechanics), experimental physics, chemistry, botany, zoology, and geology. Honours may be taken in any subject, but the compulsory number is not decreased thereby. Examination-fee, 5*l.* The final examination may be taken one year after passing the Intermediate, but three years must come between the Final and the entrance examination. The subjects for the Final Pass examination must be three of the ten prescribed subjects. The candidate for an Honours degree takes one of the subjects, with an appropriate subsidiary subject. Longer notice of entry is required from Honours candidates. The fee is 5*l.* Internal students of the University undergo, after registration on Matriculation, a course of instruction either at a school of the University or under recognised teachers of the University. Degrees are granted in several branches of science besides natural and physical science. Details concerning all these matters will be found in the regulations for degrees of science, obtainable on application to the Principal, University of London, South Kensington, London, S.W. A graduate in science may submit a thesis, based upon his own research, not less than two years after graduation, for the D.Sc. degree (fee, 20*l.*).

At the *English Provincial Universities* the student attends the approved course of study subsequent to matriculating. The subjects are similar to those at the London University. He then takes the Intermediate and Final examinations in the subjects of the curriculum. For full particulars consult the Calendars of the Universities at Birmingham, Leeds, Liverpool, Manchester, and Sheffield.

For the *Scots Science Degrees* the student enters the University after taking the Preliminary, and attends seven of the courses of instruction in the curriculum for three academical years. However, he need only take four of the seven subjects at the particular University whose degree is desired—the other three may be taken elsewhere.

Other Branches of Science.

Branches of agricultural chemistry and engineering chemistry are specialised in by many institutions in industrial centres, including purely technical chemistry, such as dyeing, brewing, etc. It is impossible in the space at our disposal to attempt to give details of all the courses available at the *Technical Colleges* throughout the country, and advice as to local facilities must be sought from the Secretary at the Institution in the district. Optics is dealt with in a separate section.

LONDON.

† Battersea Polytechnic, Battersea Park Road, S.W.—Day and evening courses are provided in chemistry, botany, and technological subjects. Full particulars from the Secretary, Mr. J. Harwood.

† Birkbeck College, Bream's Buildings, Chancery Lane, E.C.—Complete courses (day and evening classes) in science subjects. Degree course for B.Sc. Fees: Day, 17*l.* 10*s.* per session; evening, 8*l.* per session. Secretary, Mr. H. Wells Eames.

City and Guilds Central Technical College, Exhibition Road, S.W.—Diploma courses in civil and mechanical engineering, electrical engineering, and chemistry. Fees, 36*l.* per session. Registrar, Mr. J. Jones.

† City of London College, White Street, Moorfields, E.C.—Chemistry, botany, and physics are taught in evening courses. Fees. 10*s.* to 30*s.* for non-members. A course is given of the chemistry for the Minor, fee 30*s.* to non-members. Secretary, Mr. David Savage.

* East London College, Mile End Road, E.—Intermediate and Final B.Sc. courses, evening, 5*l.* 5*s.*; day, 10*l.* 10*s.* Registrar, Mr. T. C. Hodson.

† Goldsmiths' College, New Cross, S.E.—Science instruction in evening classes. Fee, 5*s.* to 15*s.* Warden, Mr. W. Loring, M.A.

* Imperial College of Science and Technology.—*See* constituent colleges—Royal College of Science and City and Guilds Central Technical College.

* King's College, Strand, W.C.—Faculty of Science, composition-fees, 31*l.* 10*s.* per annum. Secretary, Mr. Walter Smith.

† Northern Polytechnic Institute, Holloway, N.—Degree courses, fee 6*l.* 6*s.* to 15*l.* 15*s.* per session for day course; evening classes in science, fee 5*s.* to 50*s.* each subject. Secretary, Mr. W. M. Macbeth.

* Royal College of Science, Exhibition Road, S.W.—Degree and diploma courses in science and engineering. Sessional fees, 16*l.* to 41*l.* Registrar, Mr. R. Fladgate.

* Royal Holloway College, Englefield Green, Surrey.—College for women students, mainly residential. Degree courses in science, fee, 33*l.* 6*s.* 8*d.*, or, without residence, 12*l.*

† Sir John Cass Technical Institute, Jewry Street, Aldgate, E.C.—Evening courses in chemistry, physics, and special subjects, fee, 4*s.* to 10*s.* B.Sc. course provided. Secretary, Mr. W. H. Davison, M.A.

† South-Western Polytechnic, Manresa Road, Chelsea, S.W.—Evening courses in chemistry and botany adapted for the Minor cost 25*s.* per session. Day course (B.Sc., etc.), 15*l.* per session. Secretary, Mr. H. B. Harper.

† Technical College, Leonard Street, Finsbury, E.C.—Constituent of City and Guilds of London Institute. Courses similar to those at the Central Technical College, but shorter. Fees, 20*l.* per session. Registrar, Mr. K. Dove.

* University College, London, Gower Street, W.C.—Fees for three years' complete B.Sc. course, including chemistry, 110*l.* Secretary, Mr. W. W. Seton, M.A.

Wandsworth Technical Institute, High Street, Wandsworth, S.W.—Evening classes in science subjects suitable for pharmaceutical students. Fee, 7*s.* 6*d.* to 15*s.* per subject.

† West Ham Technical Institute, Romford Road, E.—Day courses in chemistry and physics, fee 10*l.* 10*s.* to 12*l.* 12*s.* per session. Evening classes, 9*s.* to 30*s.* per subject. Principal, Mr. A. F. Hogg, M.A.

† Woolwich Polytechnic, Lower Market Street, Woolwich.—Instruction is given in chemistry and botany. Fees, 5*s.* to 40*s.* per session. Clerk, Mr. A. J. Naylor.

THE PROVINCES.

Aberdeen.—*University.*—Degree courses in science. Fees, 2*l.* 2*s.* to 4*l.* each subject in the summer or winter sessions.

Aberystwyth.—*University College of Wales.*—Fee for the science course, 10*l.* per session, exclusive of practical work, which costs 1*l.* 1*s.* to 4*l.* 4*s.* per term.

Bangor.—*University College of North Wales.*—Inclusive fees as at Aberystwyth. Registrar, Mr. J. E. Lloyd, M.A.

Barrow-in-Furness.—*Technical Schools, Abbey Road.*—Chemistry (general and technological) and physics at evening classes. Fee, 7*s.* 6*d.* to 15*s.* per session.

Belfast.—*University College.*—A constituent of the National University of Ireland. Class fees usually 1*l.* to 2*l.*, except practical chemistry, 3*l.* to 5*l.* Registrar, Professor J. Symington, M.D., F.R.S.

Birmingham.—*University.*—B.Sc. degree course in pure science costs about 12*l.* 12*s.* to 28*l.* per year. *Municipal Technical School, Suffolk Street.*—Evening classes in science cost 5*s.* to 15*s.* per session. Principal, Dr. W. E. Sumpner.

Bradford.—*Municipal Technical College.*—Day course for science qualification or technological (dyeing) subjects, fee 13*l.* Evening: B.Sc. course, 21*s.*

Brighton.—*Municipal School of Science and Technology.*—Day courses for London University examinations. Fee, 5*l.* 5*s.* per term.

Bristol.—*University.*—Degree courses. Evening lectures in chemistry and botany; fees, 10*s.* per session. *Merchant Venturers' Technical College.*—Chemistry and physics classes (evening), 5*s.* to 10*s.* per subject. Day classes are also held.

Cardiff.—*University College of South Wales and Monmouthshire.*—Classes are given in science subjects.

Cork.—*University College.*—A constituent of the National University of Ireland. Courses and fees as at Belfast. Registrar, Mr. Alexander Jack, M.A.

Derby.—*Technical College.*—Courses of instruction include chemistry, botany, and physics. Fees: day, 10*l.* 10*s.* per course, or 10*s.* 6*d.* per subject per term (except pharmaceutics, 1*l.* 1*s.*); evening, 10*s.* 6*d.* to 1*l.* 1*s.* per year. Registrar, Mr. J. L. Rees.

Dublin.—*Royal College of Science.*—Three years' course for A.R.C.Sc.I. Registrar, Mr. P. A. E. Dowling.

Dundee.—*University College.*—Botany, chemistry, and physics are taught in day classes. Fees, 1*l.* 11*s.* 6*d.* to 4*l.* for each winter or summer session.

Edinburgh.—*Heriot-Watt College, Chambers Street.*—Composition-fee for complete day courses in chemistry and physics, 12*l.* 12*s.* to 15*l.* 15*s.* per session. Evening classes in science subjects, 5*s.* to 21*s.* per session.

Exeter.—*Royal Albert Memorial College.*—Degree course in science; composition-fee, 12*l.* per year. Evening classes in science, 5*s.* to 10*s.* per subject each session. Registrar, Mr. A. Woodbridge.

Galway.—*University College.*—A constituent of the National University of Ireland. Courses and fees as at Belfast.

Glasgow.—*University.*—Degree courses in science, including pharmacy. Class fees in science subjects, 2*l.* 2*s.* to 4*l.* 4*s.* per session, with higher fees for practical work. *Technical College.*—Day and evening classes in chemistry.

Halifax.—*Municipal Technical College, Hopwood Lane.*—Science and technological courses. Fees: Evening, 5*s.* to 10*s.* per subject, or 21*s.* per course; day, 21*s.* per subject.

Huddersfield.—*Technical College.*—Full-day courses and evening classes are held in science and technological subjects. Evening science courses. Fee, 10*s.* 6*d.* per session.

Hull.—*Municipal Technical School, Park Street.*—Evening classes in chemistry. Course fees, 7*s.* 6*d.* to 15*s.* per subject. Principal, Mr. T. Luxton, B.A., B.Sc.

Lancaster.—*The Storey Institute.*—Evening classes in chemistry, physics, and biology. Fee, 4*s.* per subject, or 7*s.* 6*d.* per course (including practical work). Principal, Mr. Wm. French, M.A., F.I.C.

Leeds.—*University.*—Lecture courses of degree in science subjects, 1*l.* 11*s.* 6*d.* to 3*l.* 13*s.* 6*d.* per course. Laboratory fees, 3*l.* 3*s.* to 21*l.* per session. *Central Technical School, Cookridge Street.*—Evening courses in chemistry, adapted to the University degrees and diplomas in science. Sessional fee, usually 7*s.* 6*d.*

Liverpool.—*University.*—Course for degrees in science or special purposes. Course fees in science, 3*l.* to 4*l.* Laboratory-work, 6*l.* to 21*l.* per course.

Manchester.—*University.*—Degree courses in science (including pharmacy). Registrar, Mr. Ed. Fiddes, M.A. The *School of Technology* also gives sound education in science (Principal, Professor Pope, F.R.S.).

Newcastle-upon-Tyne.—*Armstrong College.*—Fees for curriculum of B.Sc. Durham, 60*l.* Evening classes are held. Secretary, Mr. F. H. Pruen.

Nottingham.—*University College.*—Day science courses. Evening classes in chemistry, physics, and botany. Fee, 5*s.* to 10*s.* per subject. Registrar, Mr. P. H. Stevenson.

Plymouth.—*Municipal Science, Art, and Technical Schools.* Day courses in science subjects cost 1*l.* 11*s.* 6*d.* to 2*l.* 12*s.* 6*d.* per session each. Fee for evening classes, 5*s.* to 10*s.* each. Secretary, Mr. E. C. Cook.

Reading.—*University College.*—Day and evening classes in science subjects. Materia medica at afternoon class; fee, 1*l.* per course. Evening class, fees, 5*s.* to 10*s.* each.

St. Andrews.—*University.*—B.Sc. degree costs about 39*l.* to 50*l.* for University and college fees.

Sheffield.—*University.*—Degree courses in science. Sessional lecture fees, 1*l.* 11*s.* 6*d.* to 4*l.* 4*s.* per course; laboratory fees, 3*l.* 3*s.* to 16*l.* 16*s.* per session. Evening classes at low fees. Registrar, Mr. W. M. Gibbons.

* Schools of the University of London.

† Institutions having teachers recognised by the University of London.

Southampton.—*Hartley University College.*—Composition-fee for B.Sc. courses, 15*l.* 15*s.* per session. Evening classes in science subjects at low fees. Principal, Dr. S. W. Richardson.

Swansea.—*Technical College.*—Chemistry, physics, and botany at evening classes. Fees: Lectures, 5*s.*; practical work, 10*s.* per subject. Day courses are held. Secretary, Mr. W. James.

Optical Diplomas.

Chemists are rapidly monopolising the practice of sight-testing and spectacle-fitting, and it has proved to pay well to those who fit themselves to deal adequately with this side-line by obtaining a thorough grounding in the subject. A good insight into the question, which is helpful in deciding whether ophthalmic optics is a suitable side-line for a particular town, can be obtained by reading "The Chemist-Optician" (office of The Chemist and Druggist, 4*s.*).

We now give some details of the two diploma schemes which are working in this country, prefacing them with the remark that the certificates have as yet no legal status. The possession of a diploma is perhaps the best evidence of skill that a pharmacist can put before a medical practitioner, as it proves that the holder has gone through a course of study in the subject.

The Spectacle-makers' Company, 11 Temple House, Temple Avenue, London, E.C., hold examinations twice a year in London or the provinces. The diploma scheme was founded in 1898, and has been several times revised. A revised syllabus was issued in May of this year. The main features of the syllabus are as follows: There are three examinations: (1) The Preliminary examination, consisting of five sections:

(*a*) A written examination in elementary mathematics and in arithmetic.

(*b*) A *viva-voce* examination in general optics, practical optics, and frame-adjusting.

(*c*) A written examination in general opties, practical optics, and frame-adjusting.

(*d*) A practical examination in the optical analysis of lenses and in lens-setting.

(*e*) A practical examination in frame-adjustments and measurements and in optical prescriptions.

(2) Final examination in visual optics and sight-testing, consisting of three sections:

(*f*) A *viva-voce* examination in visual optics.

(*g*) A written examination in visual opties.

(*h*) A practical examination in the adaptation of lenses to correct errors of vision.

(3) Final examination in advanced optics and scientific instruments, consisting of four sections:

(*i*) A *viva-voce* examination in the principles of optical and meteorological instruments.

(*j*) A written examination in advanced optics and the opties of instruments.

(*k*) A practical demonstration of the adjustment and use of optical and meteorological instruments.

and when honours are taken

(*l*) A written and practical examination on a special syllabus.

The last-named syllabus deals with advanced optical knowledge, and requires a knowledge of three of the following subjects: (1) Camera, (2) optical lantern, (3) microscope, (4) telescope, (5) stereoscope and range-finder, (6) sextant, (7) theodolite, (8) polariscope, (9) spectroscope and spectrometer.

The books recommended in the syllabus are as follows:

Section a. Consterdino and Barnes' "Practical Mathematics."

Sections b, c, d, e. Laurance's "General and Practical Optics"; Glazebrook's "Light"; Thompson's "Optical Tables and Data"; and Phillips' "Spectacles and Eyeglasses."

Sections f, g, h. Laurance's "The Eye"; Hartridge's "Refraction"; Taylor's "Key to Sight Testing."

Sections i, j, k, l. Johnson's "Optical Instruments"; Glazebrook's "Heat and Light"; Percival's "Optics"; Ganot's "Physics."

Other books recommended are:

Tscherning's "Physiologic Optics"; Glazebrook's "Practical Physics"; Johnson's "Photographic Optics"; Gage's "The Microscope"; Maddox's "Ophthalmological Prisms"; Taylor's "Frame-fitting"; the "Optician's Manual."

The fees are three guineas for each examination, and in addition the diploma costs four guineas. Those who take up the freedom of the City of London, which they are entitled to when they have become freemen of the Spectacle-makers' Company, can do so on payment of one guinea. There are small annual payments to the Company for "quarterage."

At the last examination, held in July, there were set questions in optical testing. The candidate was given a card upon which were eight problems to be solved at the optical bench. In applying for information to the Company it saves time to state age, how long connected with the optical industry, what examinations it is desired to enter for, whether a master or an assistant, and if a member of the Society of Chemist Opticians. The full prospectus can be obtained from the Clerk of the Company, Colonel T. Davies Sewell, F.R.A.S., 11 Temple House, Temple Avenue, London, E.C.

The British Optical Association (Incorporated 1895), 199 Piccadilly, London, W., was the first to start an optical examination scheme. There are two grades of examination, membership (dioptric grade) and fellowship, and these are held twice yearly in London (May and November), or in the provincial centres when a sufficient number of candidates desire it.

Candidates for the dioptric grade are required to produce a Preliminary certificate from an approved examining body. (The list of approved examining bodies is similar to that of the Pharmaceutical Society of Great Britain.) The examination is practical and theoretical, and by a recent decision of the Council the theoretical part can be taken separately and in advance of the practical work, although no certificate is given until the practical examination is passed. The subjects in which the candidate is examined are lenses, frames, subjective sight-testing, dissection, physical optics, physiologic optics, anatomy and physiology of the eye, phorometry, and ethics.

For the Fellowship examination candidates must hold the dioptric certificate, and are examined in similar subjects as before, but a deeper knowledge is required, and prismetry, ophthalmoscopy, embryology, and microscopical demonstrations are included.

The examination-fees are: dioptric grade 3*l.* 3*s.*, fellowship 5*l.* 5*s.* Qualified chemists of Great Britain and Ireland are exempt from portions of the dioptric grade examination.

Further information can be had from the Secretary, Mr. J. H. Sutcliffe, F.R.S.L., 199 Piccadilly, London, W.

Optical Instruction.

The British Optical Institute, Mount Edgcumbe-Gardens, Clapham Road, London, S.W., conducted by Mr. F. Gordon Huntley, prepares students for the examinations of the British Optical Association and the Spectacle-makers' Company. The teaching staff includes a qualified ophthalmic surgeon, and the courses of instruction are conducted practically and by correspondence. The student is recommended to begin with a postal course, and supplement this by personal attendance at the Institute when the theory is well understood. A refraction clinic for the poor is carried on at which students obtain practice in sight-testing. The theoretical portion of the dioptric course costs in fees 3*l.* 3*s.*, and the fee for practical work, sight-testing, frame fitting, frame making, and repairing, lens grinding and polishing, etc., is 5*l.* 5*s.*, or the two courses combined 7*l.* 7*s.* The Fellowship course is in two parts: (1) theoretical, costs 5*l.* 5*s.*, and (2) practical, 7*l.* 7*s.*, or together 10*l.* 10*s.* The classes are held during the day and in the evening.

Mr. A. E. Grey, 13 and 14 Spencer Street, Clerkenwell, London, E.C., receives pupils for personal instruction in the practical work and sight-testing part of the Spectacle-makers' Company's syllabus.

Mr. J. C. Kidd, 551 Cheetham Hill, Manchester, specialises in optical instruction for the examinations of either of the examining bodies.

Mr. Lionel Laurance, Orthos House, 21 John Street, Bedford Row, London, W.C., conducts, in association with

Mr. H. Oscar Wood, courses of instruction in preparation for the examinations of the Spectacle-makers' Company. The tuition is both in class and by correspondence. The fees for the Preliminary examination (excepting the mathematical portion) are 5*l.* 5*s.*, for mathematics and arithmetic 1*l.* 1*s.*, for the Final examination 5*l.* 5*s.*, for sight-testing or advanced optics. A special reduction in fees is made to members of the Society of Chemist-Opticians.

London School of Optics, 47, Hatton Garden, London, E.C.—This school, carried on in connection with the Anglo-American Optical Co., provides instruction in general refraction and sight-testing, both in class and by correspondence.

The Northampton Institute, Clerkenwell, London, E.C. The courses in optics are held in the British Horological Institute in Northampton Square. The full course of technical optics occupies two years, and consists of lectures, laboratory work, drawing-office work, tutorial classes, and workshop practice. As the work develops, third year's courses will be established. The winter term begins on October 3. The fees are 15*l.* per session (October to July). Partial courses (two afternoons a week) may also be taken, for which the fee is 3*l.* per session, and there are afternoon classes suitable for chemists in business who cannot leave during the day. The whole field of optics is covered both theoretically and practically. The next term begins on October 4. The prospectus of the optical department can be had by applying to Dr. R. Mullineux Walmsley, the Principal.

The Scottish Optical College, 4 Newton Street, Charing Cross, Glasgow.—Founded 1905. Tuition is given in day, afternoon, and evening classes, and instruction by correspondence can also be had. The fees for a full course are 4*l.* 4*s.*, for the short course 3*l.* 3*s.* The short course is partly practical and partly conducted by correspondence. Classes are held in Edinburgh when sufficient applications are received.

Leeds College of Pharmacy, Clarendon Road, Leeds.—Mr. F. Pilkington Sargeant conducts optical correspondence classes. The fee for the three months' course, which includes one interview for demonstration in sight-tesing, is three guineas.

Scholarships and Prizes.

There are several opportunities for pharmaceutical students in the shape of scholarships and prizes, and the brief particulars given below will afford the student an idea of the scope of these competitions. Further inspection will show that some are strictly limited and others open to all students. Full details can be obtained from the gentlemen mentioned in the respective paragraphs.

National Scholarships.—*Local exhibitions* in science are granted at the discretion of the local education authority (who must contribute about half of the funds) usually by competition in connection with the Board of Education's annual examinations in science. The exhibitioner may pursue his studies (tenable on application for three years) at the local institution, or may exercise his option of taking his instruction at the Imperial College of Science and Technology. A maintenance allowance is included in the award. The standard attained in the competition must be comparable to that of a Royal or of a National Scholarship.

Royal Scholarships, to the number of eighty (not less than twenty awarded in 1910), tenable at the Imperial College of Science and Technology, are awarded by the Board of Education on the results of their evening examinations (practically for the highest marks obtained on Honors subjects). The scholarship entitles the holder to free admission to the lectures and laboratory-work and a maintenance allowance of 60*l.*, with third-class railway-fare to and from his home once each session.

The Free Studentships in science are awarded under similar conditions as the Royal Scholarships, and total forty-five (not less than eleven in 1910). The studentship entitles the holder to free tuition at the Imperial College of Science and Technology.

Jacob Bell Scholarships.—Two scholarships are offered annually by the Pharmaceutical Society as a memorial of Jacob Bell. In addition to free education in the Society's school, the award also comprises 25*l.* in cash and books to the value of 2*l.* 10*s.* The scholarships are open only to student-associates of the Society not less than twenty or more than twenty-two years of age who have been engaged for not less than three years in the pharmacy (*i.e.*, open shop) of a pharmaceutical chemist or a chemist and druggist. The examination is held on the third Tuesday in June, at London, Edinburgh, and Manchester. Application for admission must be made on or before June 1 to Mr. Richard Bremridge, 17 Bloomsbury Square, London, W.C. The subjects of the examination are:

Latin.—Translation of "unseen" passages. Latin into English, English into Latin.

French or German.—Translation of "unseen" passages. French or German into English, English into French or German.

Chemistry, Pharmacy, and Botany.—A three hours' paper dealing with these subjects in their relation to the British Pharmacopœia. The questions will be based upon an elementary knowledge of the principal chemicals, drugs, and processes of the British Pharmacopœia such as a student may reasonably be expected to have acquired during apprenticeship.

The Manchester Pharmaceutical Association Scholarship has an annual value of about 26*l.*, which is spent in paying school-fees. It is open to student Associates of the Pharmaceutical Society who have been engaged for not less than three years in the pharmacy of a pharmaceutical chemist or a chemist and druggist in Lancashire, Cheshire, or the High Peak Parliamentary Division of Derbyshire. The other conditions of entry and competition are similar to those of the Bell Scholarship, except that the competitors must not be less than nineteen or more than twenty-one years of age. The winner of this scholarship may study in any provincial school of pharmacy or in the Society's school. The scholarship frequently goes a-begging.

Fairchild Scholarship and Prizes.—One scholarship of 50*l.* and four prizes of 5*l.* each are awarded annually by a Committee of Trustees on behalf of the donors, Messrs. Fairchild Bros. & Foster, London and New York. Any registered student of pharmacy in the United Kingdom who has fulfilled the conditions of entry for the Minor examination of the Pharmaceutical Society of Great Britain or the Licence examination of the Irish Society may enter for this competition, provided he is between the ages of twenty and twenty-two. The examination comprises written papers in elementary chemistry, elementary materia medica, practical pharmacy, prescription-reading, and elementary business knowledge. The candidate obtaining the highest aggregate number of marks is awarded the scholarship, and out of it he must pay school-fees for not less than three months at any scholastic institution he may select to enable him to prepare for the Minor examination of Great Britain or the Licence examination of Ireland. Any of the money not used in this manner is paid to the student for maintenance. The prizes of 5*l.* are awarded to the best students in England, Wales, Scotland, and Ireland. The questions set in this year's examination were printed in The Chemist and Druggist of June 26, p. 985, and the results were given in our Jubilee Number, July 31, p. 237. The examination syllabus can be obtained from Mr. A. E. Holden, Committee of Trustees, Bath House, Holborn Viaduct, London, E.C., with whom entries must be made for the next examination before June 1, 1910. The candidate may be examined at any of the following centres—Cardiff, Dublin, Edinburgh, London, and Manchester—at which the examination is held in June.

"Corner for Students" Prizes.—Students' competitions were founded by The Chemist and Druggist in 1868, and their popularity has never been greater than it is to-day. Exercises in qualitative chemical analysis are provided, for which two book prizes are offered monthly. A tournament is conducted throughout the winter session, the marks each month being registered, and the three competitors who receive the highest number are awarded parchment certificates and book prizes to the value of 2*l.* 2*s.*, 1*l.* 1*s.*, and 10*s.* 6*d.* Prizes are also awarded to any student whom the conductor of the "Corner," Dr. Leonard Dobbin, judges to have made meritorious progress.

Herbarium Prize.—Medals and certificates are offered by the Pharmaceutical Society of Great Britain to student-associates for a herbarium of British plants collected in any part of the United Kingdom, the Channel Islands, or the Isle of Man, between January 1 in one year and July 1 in the year following. The collection must not exceed 150 specimens, which must be selected and mounted to display the characteristic features of the more prominent and typical genera of the chief British natural orders. Particulars can be obtained from Mr. Bremridge, 17 Bloomsbury Square, London, W.C.

The Aberdeen Pharmaceutical Association offers to local apprentices a scholarship for attendance at the pharmaceutical

classes at Robert Gordon's College School of Pharmacy. Particulars can be had on application to the Secretary of the Association, Mr. W. F. Hay.

Bowman Prizes.—Six book prizes, presented by Mr. W. P. Bowman, of an aggregate value of 10*l.*, are offered annually by the Leeds Chemists' Association. The questions are in chemistry and pharmacy, and are in two sets—one for juniors and the other for seniors. The syllabus is obtainable from Mr. J. R. Bentley, Hon. Secretary, 85 Kirkgate, Leeds, with whom entries must be made before March 1.

The Edinburgh Assistants' Association offers several prizes for competition among its members only, including a ticket for attendance at chemistry classes and prizes for botany.

Muter Scholarship.—A free tuition scholarship, tenable in the South London School of Pharmacy, 325 Kennington Road, London, S.E., is offered for competition in September each year. For printed particulars apply to the Secretary of the school.

Post-Graduate Awards.

The foregoing paragraphs refer solely to competitions for which the pharmacist is not eligible. The following are awarded subsequent to the qualifying examination.

The Pharmaceutical Society of Great Britain.—Three prizes are offered annually, consisting of medals for competition by pharmaceutical chemists who have passed the Major examination during the year. The examination is in materia medica, botany, and chemistry, and is held shortly after the Major examination in April. The Registrar communicates with each person entitled to compete, advising him of the matter. The first prize is the Pereira Silver Medal and 5*l.* worth of books; second, the Society's Silver Medal; third, the Society's Bronze Medal.

The Society also has in its gift the following scholarships:—

The Redwood Scholarship, of the value of about 60*l.* in cash, which is awarded every second year to a pharmaceutical chemist, and enables him to work in the Society's research laboratory.

The Burroughs Scholarship of 60*l.* is a similar award every second year.

The Salters' Research Fellowship in chemistry, of the annual value of 100*l.*, is awarded for a similar purpose.

The Pharmaceutical Society of Ireland.—The Council awards annually a gold and silver medal to pharmaceutical chemists who have during the year passed the Licence examination and obtained the following standards of marks: for the gold medal, not less than 240 marks out of 300, and sixty-five in each of the three subjects: for the silver medal, 230 marks out of 300, and sixty in each of the three subjects.

The Kinninmont Prize, awarded annually, is open to pharmacists residing in Glasgow and the West of Scotland who have passed the Minor at any time from October two years preceding the date of examination. The examination, which is in elementary botany and physics, is held in Glasgow in January. The Hon. Secretary is Mr. W. L. Currie, 223 Byres Road, Dowanhill, Glasgow.

APPOINTMENTS.

Dispensers.

Metropolitan Asylums Board.—The salary paid by the Board for the post of dispenser is 100*l.* per annum, rising by annual increments of 5*l.* to 130*l.*, with dinner and tea daily.

Army Dispensers are non-commissioned officers in the Royal Army Medical Corps, who pass examinations in pharmacy, materia medica, posology, and similar subjects conducted by the medical officers. It is necessary to enlist in the corps, and work up to the position which entitles a man to enter for the examination. In larger hospitals practically all non-commissioned officers of the rank of serjeant and upwards are dispensers.

Boards of Guardians.—Poor-law dispensorships under the Local Government Board of England are open to those who hold certificates as Licentiates of the Society of Apothecaries, London; apothecaries' assistants (under the English Act); Army compounders; chemists and druggists (G.B.), or pharmaceutical chemists (Ireland). Salaries begin at 120*l.*, and can be increased by 20*l.* after four years, and then by biennial increments of 10*l.* until a maximum of 180*l.* a year is reached in the metropolitan area. In the provinces there is no fixed limit, the salary being fixed and varied by the Guardians of each Union, with the sanction of the Local Government Board. Dispensers receive pensions on retirement through age or ill-health, a deduction from the salaries being made in respect to this arrangement.

Naval Hospitals.—There are nineteen berths for dispensers at home and abroad. Candidates for vacancies (which are advertised as they occur) must be chemists and druggists or pharmaceutical chemists, and not more than twenty-eight years old. The pay commences at 110*l.* per annum, with biennial increments of 5*l.* until 130*l.*, then by 10*l.* every two years to 230*l.* Additional allowances of from 20*l.* to 40*l.* a year are made to dispensers in charge of stores; 20*l.* is also allowed to the dispenser instructing the Sick-berth Staff at Haslar. Free quarters are provided, and allowances made to those serving on foreign stations to meet the increased cost of living. Pensions are granted on retiring. Entry into the Service is by examination, conducted by the Civil Service Commissioners, but the candidates are first selected by the Medical Department of the Navy, 18 Victoria Street, S.W., to the Director-General of which Department applications respecting vacancies and nominations should be addressed.

Prison Service.—The regulations for compounders in English and Welsh prisons admit applicants between the ages of twenty-four and thirty-five years, inclusive. Candidates must hold a qualification of the Pharmaceutical Society of Great Britain, and must satisfy the Civil Service Commissioners as to their abilities in reading, writing, orthography, and arithmetic. The duties consist of dispensing medicines, assisting in keeping medical records, keeping medical and surgical instruments in order, assisting in the performance of surgical operations, doing the duties of hospital warder when necessary, and keeping the dispensary and its stores. The scale of remuneration is 105*l.* per annum, rising by 2*l.* per annum to 125*l.*, then by 5*l.* per annum to 150*l.*, with quarters, or 15*l.* 12*s.* per annum in lieu thereof. An application-form for appointment to the subordinate staff in the prison service has first to be obtained from the Civil Service Commissioners, Burlington Gardens, London, W.

Analysts.

The following appointments, mainly for analytical purposes, are held by persons (including pharmacists) who have specialised in certain directions. The pharmaceutical training is a valuable asset to anyone holding these appointments.

The Admiralty, Whitehall, London, S.W., employs several chemists at Portsmouth, and as inspectors of victualling-stores at Deptford, Gosport, and Plymouth.

The Metropolitan Water Board, 20 Nottingham Place, London, W.—All the appointments upon the chemical and bacteriological staff of the Board's laboratory have been made up to the present as the result of public advertisement, but vacancies will usually be filled by promotion if there is a suitable applicant in one of the Board's departments.

Agricultural Analysts are appointed by County Councils under the Fertilisers and Feeding-stuffs Act, subject to the approval of the Board of Agriculture.

The War Office, Whitehall, S.W.—The Civil Service Commission publishes the regulations for examination for assistant chemists in the Department of the War Office Chemist at Woolwich. The age-limits are from twenty to twenty-five.

Gas Examiners are appointed by public authorities to make independent examination of gas-supplies. In the provinces local professional chemists are usually appointed. The London County Council examines applicants for gas-testing appointments. The successful candidate is then appointed for relieving work, and permanent appointments are made by seniority. Some gasworks employ chemists to take the analytical control of the manufacture of gas.

The Patent Office, Southampton Buildings, London, W.C., appoints examiners of patents, and some of these need to be chemists. Particulars of the open competitive examinations are obtainable from the Civil Service Commission, Burlington Gardens, London, W. Age-limit, twenty to twenty-five.

BOOKS FOR THE STUDENT.

Text-books form almost an essential addendum to modern curricula. In the following brief note, books that have been found useful by actual experience in the study of pharmacy and its allied subjects are given, with an indication of their uses.

Botany. — J. W. Oliver's (Birmingham) "Elementary Botany" (Blackie), 2*s.*, is adapted to the beginner's requirements, while Lowson's "Text-book of Botany" (Clive), 6*s.* 6*d.*, finds favour with many students of pharmacy. For simple life-histories of plants, Scott's "Introduction to Structural Botany" is unsurpassed—Part 1, flowering plants, for the Minor student, and Part 2, flowerless plants, for the Major student (Black), 3*s.* 6*d.* each part. Green's "Manual of Botany," Vol. I., Morphology and Anatomy, Vol. II., Classification and Physiology (Churchill), 7*s.* 6*d.* and 10*s.*, and Vine's "Student's Text-book of Botany" (Sonnenschein) fit the advanced student's requirements. Buckley's "Botanical Tables for the use of Junior Students" (Macmillan), 1*s.* 6*d.*, and Holmes's "Botanical Note-book" (Christy), 3*s.*, are smaller works on classification, more complete works being Bentham and Hooker's "Handbook of British Flora" (Reeve), 10*s.*, and Willis's "Flowering-plants and Ferns" (Cambridge Press), 2 vols., 10*s.* 6*d.* Green's "Soluble Ferments and Fermentation" (Cambridge Press), 10*s.* 6*d.*, and "Introduction to Physiology" (Churchill), 10*s.* 6*d.*, are classics in the subjects treated. The field botanist's companion should be Hayward's "Botanist's Pocket-book" (Bell) 4*s.* 6*d.*

Chemistry.—Attfield's "Chemistry" (Gurney & Jackson), 15*s.*, is still the favourite with the pharmacy student, and Newth's "Inorganic Chemistry" (Longmans), 6*s.* 6*d.*, equals it in popularity with the beginner in chemistry only. The usual starting-point in studying organic chemistry is Perkin and Kipping's "Organic Chemistry" (Chambers), 6*s.* 6*d.*, or Cohen's "Theoretical Organic Chemistry" (Macmillan). 6*s.* Bloxam's "Chemistry; Inorganic and Organic" (Churchill) 18*s.*, combines both in a useful form for the advanced student. Bernthsen's "Organic Chemistry" (Blackie), 7*s.* 6*d.*, is another good book on the subject; while Keane's "Modern Organic Chemistry" (Scott), 6*s.*, affords an instructive addendum to the usual text-book. Stewart's "Recent Advances in Organic Chemistry" (Longmans), 7*s.* 6*d.*, explains important modern theories and new syntheses. The most compact standard reference on organic compounds is Richter's "Chemistry of the Carbon Compounds" (Kegan Paul), Vol. I., Aliphatic Series, 14*s.*, Vol. II., Hetero- and Carbo-cyclic Series, 15*s.* Good works on the preparation of organic substances are Cohen's "Practical Organic Chemistry for Advanced Students" (Macmillan), 3*s.* 6*d.*, and Sudborough and James's "Practical Organic Chemistry" (Blackie), 5*s.* Walker's "Introduction to Physical Chemistry" (Macmillan), 10*s.*, is simply written, and Senter's "Outlines of Physical Chemistry" (Methuen), 3*s.* 6*d.*, covers elementary requirements.

Analytical Chemistry.—The books on qualitative analysis are exceedingly numerous, each institution favouring its own or some other manual of analysis. Muter's "Analytical Chemistry" (Baillière), 6*s.* 6*d.*, is favoured by many pharmaceutical workers, for whom it is well adapted. Newth's "Practical Chemistry" (Longmans), 2*s.* 6*d.*, Perkin's "Qualitative Analysis" (Longmans), 3*s.* 6*d.*, and Clowes and Coleman's "Elementary Practical Chemistry"—Part II., Chemical Analysis—(Churchill), 3*s.* 6*d.*, are also good treatises on qualitative testing. Weston's "Schemo for the Detection of the more Common Classes of Carbon Compounds" (Longmans), 2*s.*, is eminently practical. Clowes and Coleman's "Quantitative Chemical Analysis" (Churchill), 10*s.*, fills the student's wants for a book on quantitative inorganic analysis; while Proctor's "Pharmaceutical Testing" (*C. & D.* Office), 2*s.* 6*d.*, and "Practical Methods of Urine-analysis" (*C. & D.* Office), 2*s.* 6*d.*, give easy and accurate methods of testing drugs and urine, and are specially written for use in the pharmacy.

Latin and Prescription-reading.—Ince's "Latin Grammar of Pharmacy" (Baillière), 5*s.*, and Bennett's "Medical and Pharmaceutical Latin for Students of Pharmacy and Medicine" (Churchill), 6*s.*, have both many points of recommendation. The former has stood the test of time.

Materia Medica.—Greenish's "Introduction to Materia Medica" (Churchill), 15*s.*, is well adapted to the beginner's requirements. Southall's "Organic Materia Medica" (Churchill), 4*s.* 6*d.*, is a compact compendium of information on practically all the drugs (and their products or substitutes) used in pharmacy. Humphrey's "Materia Medica" (Kimpton), 6*s.* 6*d.*, is another compact volume. Flückiger and Hanbury's "Pharmacographia" (Macmillan), 21*s.*, is mainly of historical value. For practical microscopical work, Greenish's "Microscopic Examination of Food and Drugs" (Churchill), 10*s.* 6*d.*, is written for the Major examination requirements. Kraemer's "Botany and Pharmacognosy" gives particular attention to the examination of drug-powders, and advantageously combines the two subjects forming the title. Squire's "Methods and Formulæ" (Churchill), 3*s.* 6*d.*, contains formulæ for stains and their uses. The book on the microscope is Carpenter's "Microscope and its Revelations" (Churchill), 28*s.*

Pharmacy.—The student's first investment should be the British Pharmacopœia, 1898 (Spottiswoode), 10*s.* 6*d.* White and Humphrey's "Pharmacopœdia" (Kimpton), 10*s.*, treats the subject-matter of the British Pharmacopœia. Lucas's "Practical Pharmacy" (Churchill), 12*s.* 6*d.*, is the book *par excellence* for the explanation of pharmaceutical processes. Ince's "Elementary Dispensing Practice" (*C. & D.* Office), 3*s.* 6*d.*, well fills the beginner's needs, while "The Art of Dispensing" (*C. & D.* Office), 6*s.*, is a fuller guide, containing all that the student will require in solving dispensing-problems.

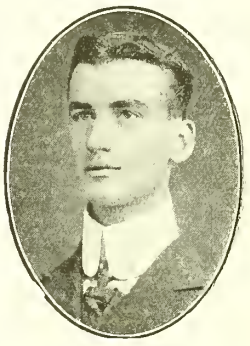
Physics.—Ganot's "Physics" (Macmillan), 15*s.*, includes the various branches under this heading, but is rather beyond the beginner, for whom Glazebrook's "Heat and Light" (Cambridge Press), 5*s.*, and Professor S. P. Thompson's "Electricity and Magnetism" (Macmillan), 4*s.* 6*d.*, are more adapted. Edser's "Heat for Advanced Students" (Macmillan), 4*s.* 6*d.*, Stewart's "Light" and "Heat" (Clive), 4*s.* 6*d* and 6*s.* 6*d.* respectively, and Poyser's "Advanced Magnetism and Electricity" (Longmans), 4*s.* 6*d.*, are preferred at some teaching institutions.

Other Books.—Dobbin's "Arithmetical Exercises in Chemistry" (Thin), 1*s.*, will provide the student with exercise in calculations. Martindale's "Extra Pharmacopœia" (Lewis), 10*s.* 6*d.*, and Squire's "Companion" and "Pocket Companion" to the British Pharmacopœia (Churchill), 12*s.* 6*d.* and 7*s.* 6*d.*, are frequently necessary to the student for reference. For doses "The *C. & D.* Dose Tables for Pharmacy Students" (*C. & D.* Office), 3*d.*, should be carried in the vest-pocket of the student and used to enlarge his knowledge of posology in his spare moments. Gadd's "Synopsis of the British Pharmacopœia" (Baillière), 1*s.*, compresses much information into small compass, and mention may be made of Mr. Gadd's "Poisons and Pharmacy Act, 1908" (Baillière), 1*s.*

Preparing for the Fairchild Scholarship.

MR. BERTIE HALL, of Bournemouth, the winner of the Fairchild Scholarship at the recent examination, has sent us his experience of the examination and also tells us how he prepared for the scholarship. These notes find an appropriate place in this issue.

I received notification on June 16 that I was to sit for the examination at Cardiff on June 23. The examination took place at the residence of Mr. Albert Hagon, one of the Trustees, and I have to thank Mr. Hagon for helping me to get over the strangeness of the surroundings. It was a great help to gaining the coveted prize to be set at ease so completely. The papers which were handed to me are those given in the *C. & D.*, June 26, p. 985. These questions were decidedly comprehensive in their requirements, demanding a thorough and complete knowledge of materia medica and at the same time clearly demonstrating that the requirements of the syllabus must only be taken as indicating broadly the lines of the examination. In preparation for the examination I found that at least one hour of real earnest study each day, together with desultory reading at intervals, was essential to success. At the same time, I availed myself of the services of Mr. D. J. Williams, of the Bath and West of England College of Pharmacy, for correspondence tuition in the subjects of the examination. One outstanding feature of correspondence tuition as compared with private study is that it arrests any slackness which may develop on the part of the student, and affords excellent practice in the answering of questions within a time-limit. In chemistry, materia medica, and pharmacy I endeavoured to ascertain the "why and wherefore" of the subjects, thus avoiding the attainment of a parrot-like memory, which, alone, is a drawback rather than an acquisition. In this way the student acquires a clear and concise knowledge of his subject, which never fails him in the examination-room and reduces the length of his studies to one-half. The books I found most useful were as follows: Roscoe's "Elementary Chemistry," with supplementary reading from Newth to cover the requirements of the chemistry syllabus; White and Humphrey's "Pharmacopedia," together with the B.P., met the demands of pharmacy and materia medica; while for business knowledge, the *C. & D. Diary*, common sense, and observation were the most valuable aids.



Mr. D. Hall.

Reform in Russia of Pharmaceutical Studies.—A Government Committee has been specially appointed to inquire into educational facilities in Russia for the study of pharmacy. It is suggested that lower and higher grades of pharmaceutical education should be recognised. The former provide for a special course of training after a suitable general education at the elementary schools has been obtained. The latter entails three years' attendance at advanced pharmaceutical classes. For both grades a preliminary knowledge of Latin is essential. On completing the lower course the student, after one year's experience in a pharmacy, may take an examination at a medical college or University, which enables him to act as an assistant to a pharmacist. The higher educational course confers the title of "dispenser," and the degree of "Doctor of Pharmacy" is attained by examination after a University course in medicine or natural science. Four years' training in the pharmacy also is to enable the candidate to enter for the examination for the assistantship.

How to Become a Continental Pharmacist.

By Alfred Knapp.

Germany.

THIS article is written with a view to enable the readers of The Chemist and Druggist to institute a comparison between the German and Swiss *apotheker* and the English chemist and druggist. The very name of "apotheker" is not even protected, as any young apprentice or assistant may call himself one if he only works in a pharmacy with the permission of the Government; but, speaking generally, an *apotheker* is a man who has passed all his examinations. Now let us see what the young German has to do in the way of studies. Under the older regulations of March 5, 1875, a youth had to spend seven years at school (*gymnasium*) and afterwards serve a three-years' apprenticeship, at the end of which a first examination was passed. Before beginning University study a further three years' practical work had to be done in a pharmacy. Half of this period might be spent in foreign pharmacies, so between the first and the second examinations I worked as season assistant at Montreaux, Florence, Naples, and Paris, and gained very interesting experience. The prescribed period of study at the University covered eighteen months (three semesters), while the examination took place in the fourth term. The successful candidate acquired the title "approbierter apotheker" with the right to buy and manage a pharmacy. Since April 1908

New Laws

have been in force. The would-be chemist must now be "primareise"—*i.e.*, he must have been eight years at the *gymnasium* and each year pass an examination promoting him to a higher class. After the eighth examination every pupil has the right to become an *apotheker*; but he is required to pass a medical examination, and defective sight or hearing or contagious disease may end his connection with the art of dispensing. The three years of apprenticeship are devoted to study and practical work, details being required of his laboratory-work in the preparation of chemicals and galenicals; he must also collect a herbarium. He may fill prescriptions, but only under the supervision of a qualified *apotheker*. Formerly the proprietor obtained a premium of 500m., but now it is the custom to pay the apprentice 70m. per month for board and lodging. After the three years of apprenticeship comes the first examination (*gehilfenprüfung*) at the nearest county town. A special Board of at least two *apothekers* and the President of the local Medical Board conducts the examination, which is written, oral, and also in practical work in pharmacy. In the last-named portion three prescriptions are required to be dispensed and a galenical preparation has to be made. Ten plants and drugs are also given for recognition. The successful candidate may call himself an "unexaminierter gehilfe." Obligatory work follows for a year in one or, if he likes, several pharmacies as an assistant, with a salary of about 150m. per month indoors. This year is called "conditionsjahr," after which our prospective *apotheker* may complete his studies at a University during four semesters (two years). The first and second terms at the University are devoted to the theory of chemistry, botany, and physics in the morning, the afternoon being given over to practical laboratory-work. The third and fourth terms are taken up with microscopy, pharmacognosy, bacteriology, and analytical, pharmaceutical, and forensic chemistry, and after two years are over,

The Final Examination

is taken. The Commission under which this is held is nominated annually by the Government, and the examination takes place at the Universities or technical high schools. The examiners include professors of botany, chemistry, pharmacy, and medicine, also one or two qualified chemists in business. A Government inspector attends to see that the examinations are correctly conducted. Entries must be accompanied by the Preliminary certificate, by particulars as to the number of years spent in German pharmacies, and also by a collegiate certificate (usually the "Fleisszettel," or certificate of industry). The candidate is also expected to have taken instruction in the principles of sterilisation. The new regulations have caused much bad feeling owing to the severe restrictions, but the average of technical knowledge has been raised considerably because of the necessity of the student devoting himself seriously to his work. The actual State examination is arranged in the following sections:

(1) The written examination. (2) The practical examination—(*a*) test in analytical chemistry; (*b*) test in pharmaceutical chemistry. (3) The oral examination—(*a*) general science; (*b*) pharmaceutical science.

The candidate is expected to express himself clearly and concisely in the three written tests in chemistry (organic and inorganic) and botany or pharmacognosy. The tests are decided by drawing lots. Three hours are allowed for each paper. In the practical examination a qualitative analysis containing not more than six acids and bases is provided, while a quantitative determination of the three single components of a compound or simple mixture may be required. Other work provided is the search for a poisonous ingredient (metallic or alkaloidal) in food or medicine, or the detection of adulteration, and the results may have to be given in quantitative form. Oral questions may be asked during practical work. At Munich this section, under the name of "bleikammer," is regarded with great dread. Pharmaceutical chemistry includes the preparation of two chemicals used in dispensing, a microscopic examination of drugs, and testing of galenicals. The oral examination proper is conducted by the professors and pharmacists in the presence of the President. The characteristics and properties of at least ten fresh or dried plants must be explained first; officinal plants and others that may be confounded with them are given. Next, at least ten crude drugs must be recognised and their origin and diagnostic features pointed out; also their uses and any substitutes. The candidate is expected to detail the processes for preparing chemicals, with their composition and salient properties. The detection and determination of possible impurities come within the scope of the questions. Pharmacy law is discussed for about fifteen minutes. The stringent nature of the examinations makes it quite impossible for anyone to qualify as an *apotheker* in Germany without knowing the principles of his calling as regards the professional side.

The fees for the examination amount to 140m. The unsuccessful candidate may present himself again in three or six months according to the average of knowledge displayed. Should the next two attempts also prove failures, he cannot again enter for examination. The marking—very good, good, adequate, inadequate, bad—is important, as preference is given to the "very good" *apotheker* in regard to pharmacy concessions. The qualified chemist must undergo a further period of assistantship lasting two years, of which at least one year must be spent in practical work in German State pharmacies. The choice of a pharmacy is unrestricted, but in a few exceptional cases the local authorities may describe a certain pharmacy as unsuitable for serving an assistantship. On the completion of the two years the recognised authorities supply a certificate if the term has been spent to advantage, and this certificate is taken into account, as well as the State examination, before the Ministry testifies that the holder is permitted to take complete control of a pharmacy.

Switzerland.

The conditions regulating the practice of pharmacy in Switzerland are very similar to those prevailing in Germany. However, the "gymnasium" period extends to ten years, while only two years' training succeeds the Preliminary examination before entering upon one year's study known as "conditionszeit" (qualifying period). At the conclusion of the latter, four terms of study follow at a University, and immediately after the successful negotiation of the State examination our Swiss colleague is fully qualified to take charge of a business. The period of training of the Swiss pharmacist is accordingly two to three years shorter than that of his German brother, who obtains a better knowledge of the practical pharmacy, owing to his three years' "conditionszeit."

Austria.

In Austria the apprenticeship lasts three years, and is followed by at least four terms of study for the assistants' examination. The subjects are similar to those in the German course. The State examination allows the use of the title "Magister der Pharmazie," but a five-years' assistantship must be served in pharmacies before a man is allowed to start in business for himself. The opening of a pharmacy is still a "concession" by the Government, but the Austrian *apothekers* are now seeking freer conditions, which the Ministry appear disposed to favour.

Italy.

The conditions governing pharmacy in Italy are different from the foregoing. Intending pharmacists, after Matriculation, go to a University for four years, but the last year includes practical work in a pharmacy, which must be certified by the owner. It often happens, therefore (I have met with two instances), that the candidate obtains a certificate from some friendly pharmacist without having made up even one prescription. The subsequent State examination, which deals only with theoretical knowledge, enables the successful candidate to style himself a "chimico-farmacista."

In conclusion, I may point out that although Russia is not regarded as a very well ordered country, yet the conditions of pharmacy are excellent. The course of study in respect to its length and strenuousness nearly equals that of Switzerland, Germany, and Austria. In France, as in Italy, insufficient value is attached to practical work.

The Chemist on the Riviera.

By a British Assistant.

Among the many openings for English qualified assistants on the Continent, to gain an experience in Continental pharmacy, there is probably no place that excels the Riviera in this respect, as it combines health and pleasure with experience. The Riviera, strictly speaking, extends for some two hundred miles of coast on the South of France and North-West of Italy, bordering on the Mediterranean, but the name is usually applied to that portion which lies between San Remo and Cannes, including Nice, Mentone, Monte Carlo, and Bordighera. Sheltered, as it is, by the high Maritime Alps from the northern winds, it escapes the rigors of our northern winter and enjoys a perfect climate and practically continuous sunshine. Here during the winter the orange and lemon trees flourish, as also the eucalyptus, palm, and numerous other semi-tropical plants. For the botanist it is a veritable paradise, the Borigo Valley above Mentone being the richest in Europe in regard to its variety of flora.

The pharmacist who commences during the earlier part of the season may witness the gathering of the olives and production of olive oil, which, together with the culture of vines, oranges, and lemons, comprise the chief industries of the neighbourhood.

During the season, which extends from the middle of October to the middle of May, there is a constant influx of visitors of every nationality, a large number of whom are English-speaking, and to meet their numerous demands there are required from forty to fifty English chemists, spread over the different towns. These berths are usually obtained by personal recommendation, by writing to the proprietors of the various pharmacies about the month of August or September, or by advertisement. Below will be found a list of the pharmacies employing English assistants, along with other particulars as to cost of living, period of engagement, etc. In Monte Carlo living is much more expensive than in other towns, and a correspondingly higher salary is given. The hours of business are from 9 A.M. to 9 P.M., with one and a half hour for lunch and the same for dinner.

The law in France demands that every assistant must have at least one day free each week. This in some cases is impracticable, but the assistant can demand in lieu of this an equivalent salary or number of days' holiday at the end of the season, which reaches its height during March and April, when the assistant will find his time fully occupied, but during the earlier and later parts he will be allowed a good deal of liberty. The employer usually pays passage-money one way, and sometimes both ways.

It is necessary in most cases that the assistant should have a knowledge of French, but even in cases where it is not expected it is almost essential that he should have a smattering at least of the language. In most of the berths the assistant will find that his time is not wholly occupied by the English work, and he will be called upon to aid in the dispensing of Continental prescriptions.

Town	Pharmacy	English Assistants	Season	Cost of Living	Salary	Remarks
Nice	Pharmacie Nicholls	2	Oct. 15 to May 1 Jan. 1 to May 1	"Pension" from 80f. to 95f. per month; rooms from 30f. to 35f. per month	Average salary 300f. outdoors	The season is longer here than in other parts of the Riviera, and the engagement may extend beyond May 1
,, ...	,, Süe	2	,,			
,, ...	,, Leonelni ...	2	,,			
,, ...	,, Liotard	1	Nov. 1 to May 1			
,, ...	,, Scoffier	1	Dec. 1 to May 1			
,, ...	,, Rostagni ...	1	Nov. 1 to May 1			
,, ...	,, Basso	1	,,			
,, ...	,, Pegurier ...	1	Jan. 1 to May 1			
,, ...	,, Rabac	1	Nov. 1 to May 1			
,, ...	,, Garnier	1	Dec. 1 to May 1			
,, ...	,, Guillabert ...	1	,,			
,, ...	,, Passerieux ...	1	,,			
,, ...	,, Majestic Palace	1	,,			
Mentone ...	,, Blancher ...	2	Nov. 15 to May 1 Jan. 1 to May 1	"Pension" from 80f. to 100f. per month; rooms from 30f. to 40f. per month	Average salary 300f. per month; if room found salary 200f. to 250f. per month	—
,, ...	,, Oddo	1	Nov. 30 to May 1			Indoors
,, ...	,, Taglioni... ...	1	,,			—
,, ...	,, Ferlet	1	Dec. 1 to May 1			Indoors
,, ...	,, Saucet	1	Dec. 1 to April 15			—
,, ...	,, Bezos	1	Dec. 1 to May 15			—
,, ...	,, Renault... ...	1	Dec. 1 to May 1			Indoors
Monte Carlo...	Pharmacie Cruzel	2	Nov. 1 to May 1 Jan. 1 to April 15	"Pension" from 90f. to 120f. per month; rooms from 35f. to 50f. per month	300f. to 400f. per month	
,, ,, ...	,, Plissonnier ...	1	Nov. 15 to May 1			
,, ,, ...	,, Anglaise ...	1	Nov. 15 to April 15			
,, ,, ...	,, Jouard	1	Dec. 1 to May 1			
,, ,, ...	,, Glimman ...	1	,,			
,, ,, ...	,, Marsan	1	,,			
Cannes... ...	Pharmacie Carlevan ...	1	Nov. 15 or Dec. 1 to May 1	"Pension" average 90f.; rooms average 35f.	250f. to 300f. per month	
,, ...	,, Glinner	2	,,			
,, ...	,, Rondet	1	,,			
,, ...	,, Gras	1	,,			
,, ...	,, Saulnier ...	1	,,			
Beaulieu ...	Pharmacie Janey	1	Nov. 15 to May 1	"Pension" 90f.; room 30f.	250f.	Both good berths for gaining knowledge of French pharmacy Indoors entirely
,, ...	,, Grosgurin ...	1	,,		250f.	
Cap Martin ...	Pharmacie du Cap	1	Jan. 1 to April 30	—	—	
Bordighera ...	Farmacie Calvnana	1	Oct. 15 to May 1	Average 90 lire per month	250 to 300 lire	Room found
,, ...	,, Tassarotti ...	1	,,			,, ,,
San Remo ...	Farmacie Calvi	1	Dec. 1 to April 15	90 lire	300 lire	Language not necessary but preferred
,, ,, ...	Pharmacy Squire	2	Oct. 15 to May 15 Jan. 1 to May 1	90 lire	250 to 300 lire; room found	Languages not necessary; work entirely English

Examination Experiences.

I. Major.

W. H. R. (22 3) writes saying that many accounts of the Minor examination have appeared in the *C. & D.* at various times, but seldom one of the Major, a description of which may encourage others to attempt it. After the usual preliminaries (he says) I was conducted to the laboratories for the Practical Work, which lasts six hours without a break. The following work was provided:

> Solution A contains potassium chromate and sulphate. Estimate the chromate volumetrically and the sulphate gravimetrically. From your results calculate the amount of each salt in 1 litre of the solution. (Use 50 c.c. of the solution for the gravimetric estimation.)
>
> Estimate qualitatively the mixture B.
>
> Take the melting-point of the substance C, and determine the elements of which it is composed.

The estimation of the chromate proved a stumbling-block to several candidates, but I preferred the method of using ferrous ammonium sulphate as standard, as simpler than that of completely precipitating the chromate with volumetric silver-nitrate solution and then titrating back with hydrochloric acid. The sulphate was precipitated as barium sulphate in hydrochloric-acid solution (to prevent precipitation of barium chromate), washed, ignited, and weighed as such. The estimations fully occupied my time until lunch-time (1 P.M.). The preliminary tests in the qualitative analysis showed the presence of lead and an alkaloid. Calcium was also found, but no other inorganic base could be detected. Conclusive reactions were given by the tests for morphine, but the acid radicles proved rather troublesome. Eventually chloride and tartrate were found. The reactions for the latter were indistinct, and other candidates with similar papers returned an oxalate. I had previously filled capillary tubes with substance C, but I had only recorded one determination when the papers were collected. As the gravimetric work was not completed and the elements in substance C still uninvestigated, I was not very pleased with my work. The following Monday saw the written papers commenced.

Chemistry questions proved quite fair, but benzene derivatives were not represented in it. In Physics a question regarding Prévost's theory of exchanges "stumped" a large percentage of the candidates, and another on optics was only easy to anyone who had done it. The remainder of the questions were commonplace. On Tuesday theoretical Materia Medica occupied one hour, three questions being given, of which two were to be attempted—small scope and time considering the wide range of the syllabus upon the subject. For the practical work in the afternoon the whole drug provided was cubebs. I happened to select a badly prepared specimen and blunted my razor. However, by clearing with chloral hydrate several respectable sections were obtained. The powder provided for examination showed a fair proportion of stone cells on clearing. The adulterant was accordingly put down as being possibly ground olive-stones. Theoretical

Botany occupied the remaining two hours of the morning. The questions were very varied. In the practical portion a stem was given. Sections had to be cut and diagrams of them drawn. I had also to state the conditions of growth of the plant from which it was obtained. The stem was typically of the aquatic type. I was relieved when a bunch of violets was handed to me for recognition, as field botany is not my strongest subject. The reasons for its natural order, a floral diagram, and a drawing of a median section were required.

"W. H. R." concludes by saying that when he heard the happy result he could hardly believe it, and, in fact, does not know how it happened even now.

II. Minor.

Chem (21 '19) gives an unusually eloquent account of his recent examination at Bloomsbury Square, London, W.C.:

"Be good enough therefore to present yourself at 10 A.M. precisely," and faithful to the dignified notice I arrived at the back door of the examination-hall *via* a stable-yard. Many were there before me; some shaking with nervous anxiety; some—old hands—whistling various ditties. The whistling cheered a novice like myself, and incidentally proved again the truth of the touching words of the illustrious but forgotten poet—

> What'er the aim, what'er the cause,
> Music—like a poultice—draws,

by attracting the attention of stray passers-by. To get to business. I was sent off with others for

Chemistry.—Volumetric—fortunately for me—was required first. The estimation—the amount of hydrochloric acid in the given solution—was quite simple, using a standard solution of sodium carbonate with methyl orange as indicator. Just to show, though, what a fellow can do. I tried to titrate the methyl orange *colourless* in the first estimation, and wasted valuable time. Accordingly I had to make the pace in analysing the "salt," which proved to contain lead, barium nitrate and chloride. The acids were easily found, also the barium suspected by the green flame; but the lead proved a nuisance.

Although the precipitate with hydrochloric acid in the cold was filtered out in Group I. and the expected deposit obtained in Group II. on passing sulphuretted hydrogen gas and filtering, yet further frequent additions of gas also gave precipitates. While I was still fiddling about "Stop testing" was called out, and I dashed out my report in a frantic hurry and handed it in prepared for the worst. A fellow-feeling makes us wondrous kind, so I began to revive when I found other candidates also "in the cart," and talking vaguely of "drowning" and "long farewells" (the former mainly connected with "flowing bowls"). After dinner came

Dispensing.—I got a fairly simple paper, as follows:

Fer. et quin. cit.	... ...	gr. v.
Inf. calumbæ ad	... ...	℥j.

Sig.: Cap. ter die. Mitte ℥viij.

Lotio hydrarg. ung. ℥iv.
(Make own mucil. tragac. for this.)
Send 4 oz. ac. acetic. s.g. 1.025.

Pil. coloc. et hyoscy.	... ...	gr. vj.
Hyd. subchlor.	... ...	gr. ij.

Ft. pil. ij. h.s.s. Mitte xij. Silver.

Ung. hyd. ammon. ℥ij.

I commenced by making another silly blunder—boiling water for the infusion. However, the tell-tale utensils were cleared before the examiner saw me. The pills to silver turned out well, but provoked the playful inquiry, "Rather a lot of silver leaf, eh?" As it was a diminutive undersized leaf I had used, I told him so. The ointment came in for careful inspection, the examiner even rubbing a portion on the back of his hand. It passed the keen scrutiny all right, and I was glad of the pains I had taken over it. The notice to attend for the theoretical part of the examination arrived the following day, and I appeared this time in even greater distress than on the first day. A word of warning to my brethren. The utterly absurd error of simply grinding away "collar off and sleeves up" until the second day nearly did me up, and I feel confident that some of the candidates were "ploughed" on that day solely from misplaced zeal. Renewal of old acquaintances with other survivors was followed by mutual congratulations and (whisper it!) mutual questions. One of the answers I obtained in this impromptu rehearsal came in particularly useful during chemistry shortly afterwards—a practical application of one of Ince's maxims: "Do not hesitate to ask questions for fear of compromising your dignity." The clock inside must be rather eccentric, for it was 10.15 A.M., not 10 A.M., before we took our places on the "funking-form."

In Prescription-reading I had to decipher some vilely written prescriptions and transcribe another into full Latin, noting any overdoses. Nothing extraordinarily hard was given, but it took me a little time to get into my stride.

Chemistry followed, with a run over oxygen, hydroxides, peroxides, barium and sodium with their salts and preparations, iodine and the methods of obtaining it. The manufacture of chlorates followed, and incidentally to this the chlorinated compounds, the end being how to make oxalic acid. The examiner asked only ordinary obvious questions in organic chemistry. On going to

Pharmacy, I was questioned on solutions. The aids and deterrents to the formation of supersaturated solutions. The iron liquors of the B.P. Various infusions with their doses and peculiarities in preparation. The methods of making preparations of ergot, with doses and strengths. Also doses and strengths of solutions of arsenic and morphine, with the incompatibility of liq. arsenicalis. I then went cheerfully to

Materia Medica, which proved almost enjoyable. The first drugs shown were senega and colocynth. Give their botanical name and natural order, geographical source, and constituents. Mention any adulterants. A poor specimen of belladonna-root was "spotted" next, also scammony, digitalis-leaves, taraxacum-root, aconite-root but, with the exception of some kind which proved difficult to identify, all was plain sailing. The last specimens were cannabis indica, castoreum (a bad sample which was not recognised), eucalyptus-leaves, jalap, and various aloes. I then went to the last subject,

Botany.—Sketch a L. S. of a rhizome of a male-fern and name the parts—a process which nearly "settled" me, as I could not answer the questions. However, better times came in describing the reproduction of the same plant. Several plants in the syllabus were then shown, both fresh and mounted, which I succeeded in identifying.

Soon afterwards the President "was pleased to tell me" I had passed; and although I refrained from stating my feelings I communicated them on two telegraph forms.

Trade Report.

NOTICE TO BUYERS.—The prices given in this section are those obtained by importers or manufacturers for bulk quantities or original packages. To these prices various charges have to be added, whereby values are in many instances greatly augmented before wholesale dealers stock the goods. Qualities of drugs and oils vary greatly, and higher prices are commanded by selected qualities even in bulk quantities. It would be unreasonable for retail buyers to expect to get small quantities at anything like the prices here quoted.

42 Cannon Street, London, E.C., August 12.

FEW outstanding items of interest are recorded in the chemical and drug markets this week, the general tone being flat, as is usual in the middle of August, with so many principals on holiday. Among drugs, chamomiles show an advancing tendency, the new crop being later than usual; higher prices are also asked for gentian for shipment, the crop also being much later than usual. Areca is scarce and dearer. Cascara sagrada is steady, and ergot and hydrastis are firm. Sweet-almond oil has advanced a further twopence owing to the temporary scarcity of almonds. Castor oil is steady. Cod-liver oil is without alteration; and lemon oil is dull, interest centring in forward delivery, sales of which have been made at a low figure. In other articles, quicksilver is quiet and easy. Citric acid and tartaric acid show a slight improvement in demand, the former being steadier. Copper sulphate is firm. Subjoined are the principal changes of the week, including those taking place at the drug-auctions:

Higher	Firmer	Easier
Almond oil B.P.	Cascara sagrada	Benzoin
Areca	Chamomiles	Milk-sugar
Opium	Gentian	Sarsaparilla (grey Jamaica)
Shellac	Hydrastis	
Wax, bees' (Jam.)	Kola	

Heavy Chemicals.

The market is still quiet as a whole, though there is a rather better inquiry on both prompt and forward account than there has been for a little while. Values continue for the most part on the steady side and without special fluctuations.

Sulphate of Ammonia.—There is a moderate demand only, and the market is distinctly on the quiet side. As, however, the production at this season of the year is a low one, values remain nominally unchanged. Present nearest figures: Beckton prompt 11*l.* 7*s.* 6*d.*, Beckton terms 10*l.* 18*s.* 9*d.* to 11*l.*, Leith 11*l.* 5*s.* to 11*l.* 6*s.* 3*d.*, Liverpool 11*l.* 2*s.* 6*d.*, and Hull 10*l.* 18*s.* 9*d.* to 11*l.* Slightly higher prices are being paid for early forward delivery this year.

Alkali-produce.—Bleaching-powder has been moving better, and maintains a firm tone on the basis of 4*l.* 5*s.* to 4*l.* 10*s.* per ton on rails for softwood casks. Caustic soda has been moving considerably better, and prices are on the steady side, 76 to 77 per cent. 11*l.* to 11*l.* 2*s.* 6*d.*, 70 per cent. 10*l.* 5*s.* to 10*l.* 7*s.* 6*d.*, and 60 per cent. 9*l.* 5*s.* to 9*l.* 7*s.* 6*d.* Ammonia alkali is in good average request at 4*l.* 10*s.* to 4*l.* 15*s.* per ton, free on rails in bags. Soda crystals are in stronger demand and very steady at 55*s.* to 57*s.* 6*d.* per ton, free on rails Tyne 57*s.* 6*d.* to 62*s.* 6*d.* per ton f.o.b. Tyne, and 60*s.* to 65*s.* per ton f.o.b. Liverpool. Saltcake is on the quiet side, and, owing to the troubles in Sweden, shipments are low, price is nominally unchanged at 40*s.* to 42*s.* 6*d.* in bulk. Bicarbonate of soda quietly steady at 5*l.* to 5*l.* 5*s.* in casks and 5*l.* 10*s.* to 6*l.* per ton in 1-cwt. kegs, f.o.b. Liverpool. Chlorates of potash and soda are steady at unaltered figures of 3½d. to 3¾d. per lb., according to quantity, etc. Yellow prussiates of soda and potash are in moderately good request at from 3*d.* to 3⅛*d.* and from 4⅝*d.* to 5*d.* per lb. respectively. Hyposulphite of soda is in somewhat brisker demand. Ordinary crystals in casks 5*l.* to 5*l.* 10*s.* per ton. In 1-cwt. kegs prices vary from 5*l.* 15*s.* to 7*l.* 15*s.* per ton, according to quality and quantity. Silicates of soda in good average request at unaltered rates, 140° Tw. 4*l.* 5*s.* to 4*l.* 15*s.*, 100° Tw. 3*l.* 15*s.* to 4*l.* 5*s.*, and 75° Tw. 3*l.* 7*s.* 6*d.* to 3*l.* 17*s.* 6*d.* per ton, according to quality, quantity, and destination.

Manchester Chemical-market.

August 10.

The fact which has been noted for some weeks past in regard to increase in export demand has been confirmed, not only by the Manchester consular district, but also by the Board of Trade returns published to-day. In the last-named instance there is a marked increase in quantities of soda compounds, bleaching-materials, drugs, dyes, and colours. Values are, however, scarcely so good as last year except in special cases. On the spot there has been very little movement since our last. Prices of heavy chemicals remain practically unchanged. Sulphate of copper is a shade steadier, in sympathy with the raw metal, while acetate of lime and acetic acid are extremely firm. Arsenic is slow at about 12*l.* 5*s.* to 12*l.* 10*s.* per ton Manchester for white powdered. Coal-tar products are extremely dull, although benzols and creosote are steady at full rates. Sulphate of ammonia is quoted 10*l.* 16*s.* 3*d.* to 10*l.* 17*s.* 6*d.* per ton on rails Manchester.

English Peppermint and Lavender Crops.

Messrs. W. J. Bush & Co., Ltd., write: "We have quite recently made an inspection of the peppermint and lavender growing districts of Mitcham and the surrounding country with a view to formulating some idea of the prospects of the crops. As regards peppermint, we have to report that the plants are looking very promising, having greatly benefited by the recent rains. What is now wanted is a little dry, warm weather to ripen the plants and bring them into flower; otherwise the yield of oil will be comparatively small, since the plants may fall away. There may be seen, due to the severe and exceptionally long winter, portions of quite large fields where the plants have failed; but we think these failures have, upon the whole, been made good in other ways. In other places there is evidence that the ground has been over-cropped in past years, and growers will probably have to discontinue the production of peppermint in such fields. The crop, in our opinion, promises to be a good average one; but much depends on the weather conditions during the present month. Distilling should commence in about three weeks' time from now, provided favourable conditions prevail for harvesting the herb. Most of the remarks anent peppermint also apply to lavender. The crop gives promise of being quite equal to previous yields. Very little, however, will be distilled again this year, most of the crop being marketed as bunch lavender."

London Markets.

Acid, Citric.—The demand in several quarters has improved slightly, but prices continue easy. English is quoted 1*s.* 3½*d.* to 1*s.* 4*d.* and foreign 1*s.* 3*d.* to 1*s.* 3½*d.*

Acid, Tartaric, is without improvement so far as regards prices, but there is a fair export demand. English makers quote 10¼*d.* and foreign can be contracted for over 1910 at 9⅜*d.* per lb., the quotation for prompt delivery being 9⅝*d.* to 9¾*d.*

Aniseed is slow of sale at 21*s.* 6*d.* per cwt. for good Russian. New crop Spanish is offering at 36*s.* per cwt. c.i.f. terms. In the drug auction twenty bags of ordinary Russian were held for 19*s.* 6*d.* per cwt.

Areca.—All the parcels from first-hands now appear to have been disposed of, and for the few bags left in second-hands from 18*s.* to 20*s.* is wanted.

Arrowroot.—Quiet. At auction small sales of St. Vincent were made at 1⅞*d.* per lb. for fair.

Camphor (Crude).—Sellers of China ask 132*s.* 6*d.* per cwt. c.i.f., and on the spot 135*s.* is quoted. For near at hand 135*s.* c.i.f. has been paid.

Canary-seed is very quiet, but the market is fairly firm at 50*s.* to 52*s.* per quarter for the usual ordinary qualities.

Caraway-seed is steady at 33*s.* per cwt. for new crop, landed terms.

Cascara Sagrada.—Small spot sales have been made at 38*s.* per cwt., but most holders require 40*s.* No c.i.f. business appears to have been done. In the drug auction 143 bags of 1906 crop were held for 40*s.*, and another lot of 150 bags was withdrawn.

Cascarilla.—Forty-nine packages have arrived from Payta per *Almond Branch*.

Cassia Lignea.—The average prices in Canton in 1908 were higher than in the previous year, says the British Consul at Canton, this being attributable to a shortage of supply and a brisk demand. The quality showed an improvement, especially in regard to colour, but Chinese producers, in spite of the action taken by the Cassia Guild and the Chamber of Commerce in 1907, still pursue their suicidal policy of giving short weights. The business in

cassia-bark was poor, undoubtedly a result of the inferior qualities supplied in recent years, which have had the natural effect of curtailing orders.

Chamomiles.—Spot supplies are getting into smaller compass, and dealers are inclined to ask more money. Fair white of the old crop are worth 56*s.* and thirds 50*s.* per cwt. As already indicated, the new crop is about four weeks later than usual owing to the recent unfavourable rains, but the more seasonable climatic conditions which have since prevailed practically throughout Europe will materially aid in rendering the crop a success. For shipment about the end of August new flowers are offered at about 70*s.* per cwt. f.o.b.

Chillies.—Steady. At auction 34 bags Nyassa sold at 50*s.* for fair bright; 49 bags Sierra Leone were bought in at 43*s.*

Cinchona.—The auction to be held at Amsterdam on August 26 will consist of 9,214 packages Ledgeriana, hybrid, and robusta, 723 cases and 879 bales Succirubra, and 65 cases Schuhkraft and Calisaya, making a total of 10,881 packages. The first-hand stock in Amsterdam on August 5 consisted of 4,276 packages Government and 17,374 packages private bark, or 21,650 packages. The shipments from Java during July amounted to 1,728,000 Amst. lb., against 1,469,000 in 1908, 1,360,000 in 1907, 1,443,000 in 1906, and 1,431,000 in 1905. The total shipments during the first seven months of the year amounted to 8,245,000 Amst. lb., against 8,826,000 in 1908, 9,663,000 in 1907, 7,303,000 in 1906, and 8,538,000 in 1905.

Cinnamon.—At auction 138 bags Ceylon chips offered and sold without reserve, including ordinary dull at 2⅜*d.* to 2½*d.*

Cloves.—At auction ten cases Penang were bought in at 1*s.* 2*d.*, and 100 bales Zanzibar at 5*d.* for good. Privately Zanzibar close lower. August-October delivery sold at 4 15/16*d.* to 4½*d.* and sellers, October-December sellers at 4 15/16*d.*, and January-March sold at 4 13/16*d.* For arrival December-February and January-March shipment sold at 4 7/16*d.* c.i.f. d/w.

Copper Sulphate is firm at from 18*l.* 10*s.* to 18*l.* 15*s.* per ton for Liverpool brands for prompt delivery, and 19*l.* for December-February.

Coriander-seed is unchanged at 8*s.* 6*d.* to 9*s.* per cwt. for wormy, and at 10*s.* to 10*s.* 6*d.* for fair to good Morocco on the spot, but the demand is slow.

Cumin-seed.—Small sales of Morocco are reported at 35*s.* to 37*s.* per cwt. for ordinary to good. A parcel of new crop Malta is on the market for which 38*s.* 6*d.* is asked.

Ergot is firm at 1*s.* 5*d.* for Spanish and 1*s.* 4½*d.* for Russian. In the drug auction 10 bags fair sound Russian sold cheaply at 1*s.* 3*d.* per lb., net terms.

Fenugreek-seed.—Retail sales have been made at 8*s.* 6*d.* to 8*s.* 9*d.* per cwt. for Morocco.

Gambier.—Cubes are steady at 37*s.* per cwt. spot.

Ginger.—Quiet. At auction 183 cases and 673 bags Cochin and Calicut were offered and 87 packages sold, including cut, small, and tips at 47*s.* and tips at 45*s.* Jamaica slow; 340 packages offered and 64 packages sold at easy rates, including fair to good ordinary at 47*s.* 6*d.* to 50*s.*, and common at 46*s.* to 46*s.* 6*d.* Subsequently small sales were made at 54*s.* to 55*s.* for low middling, and at 62*s.* for fair bright.

Guinea Grains.—A fair quantity has lately changed hands in Hamburg at between 60*s.* and 65*s.* per cwt., but no more is to be had at these figures.

Hops.—Prices within the past fortnight have undergone considerable change, and the factors report that some large parcels of old hops have changed hands at a substantial increase in price.

Hydrastis.—For a parcel now landing 7*s.* 9*d.* net is asked, which is slightly lower than the New York parity.

Lemon-juice.—The hot weather has improved the demand, fair sales of English raw having been made up to 1*s.* 5*d.* per gal.

Linseed is quiet at 50*s.* to 52*s.* per quarter for good, clean qualities.

Mace.—West India was steady at auction. Thirteen packages offered and sold, including fair pale and reddish at 1*s.* 7*d.*, fair red at 1*s.* 5*d.* to 1*s.* 6*d.*, broken at 1*s.* per lb.

Oil, Almond.—The quotation for sweet oil of almonds (B.P.) has been advanced a further 2*d.* per lb. to 2*s.* 2*d.*, and the "pallid" to 2*s.* 4*d.* This is due to the extreme scarcity of almonds and to the high prices which have been paid. The new crop is due about the end of September, when the pressers hope to be able materially to reduce their prices.

Oil, Castor.—Steady. Hull make is quoted 28*l.* 10*s.* per ton in barrels for first-pressing for August delivery, and 10*s.* less for September-December.

Oil, Citronella.—Ceylon is steady at from 1*s.* 0½*d.* to 1*s.* 1½*d.* per lb. spot.

Oil, Cod-liver, is steady at 64*s.* per barrel c.i.f. for finest Lofoten quality, and on the spot 65*s.* is wanted. Bids of slightly less would be submitted in several quarters. In the drug auction 15 barrels Norwegian sold at 50*s.* per barrel net, without reserve.

Oil, Lemon.—Under date of July 31 a Palermo report states that transactions in lemon and orange oils still continue lacking. Dealers appear to be working on previously-made contracts and only retail orders come in, causing a hand-to-mouth business. The pressing season being now over and the available supply mostly in strong hands, the comparative absence of business has had little influence on the position of prices. Probably on a firm order for a fair quantity quotations might be shaded. For shipment 3*s.* 3*d.* per lb., c.i.f. London, is quoted.

Oil, Lemongrass, is steady at from 2¼*d.* to 2¾*d.* per oz. on the spot, and for arrival 2 1/16*d.* c.i.f. is quoted for 70 per cent.

Oil, Peppermint, continues extremely dull, the value of good Wayne County being 6*s.* 3*d.* and H.G.H. 8*s.* 7*d.* to 8*s.* 3*d.*, as to quantity. In auction 10 cases Japanese (Kobayashi) were held for 5*s.* 6*d.*

Opium.—The market is decidedly firmer this week, and a fair amount of business has been done both on the spot and in primary markets, including the former at from 11*s.* 3*d.* to 11*s.* 9*d.* for Turkey druggists'. Persian is still firmly held at 13*s.* 6*d.* for fair testing quality.

Writing on July 24, a Smyrna correspondent reports a fairly active market, sales amounting to thirty-four cases, comprising twenty cases new extra Karahissar at 10*s.* 1*d.* to 9*s.* 10*d.*, thirteen cases new prime ditto at 9*s.* 6*d.* to 9*s.* 4*d.*, and one case old extra Karahissar at 10*s.* 11*d.* per lb. c.i.f. The market closed firmly at these prices. Writing on July 30 a Smyrna correspondent states that the sales amount to forty-three cases new extra selected Karahissar at 10*s.* 3*d.*, and seven cases new talequale at 9*s.* 9*d.* per lb. f.o.b. Sellers now maintain a reserved attitude, as they consider that the whole Turkey crop will not exceed 6,500 cases. The consuming markets have more or less advanced their limits, and as most makers are short it is very probable that higher prices will be established soon, especially as local speculators are anxiously waiting for a favourable opportunity to operate. The arrivals to date amount to 665 cases, against 869 at same period last year.

Orris remains dear. Good picked Florentine is quoted 42*s.* 6*d.*, sorts 38*s.*, and common sorts 35*s.* per cwt., the quotations for shipment being almost equal to these. In the drug auction nine scrons of fair Mogador were retired at from 27*s.* 6*d.* to 30*s.* per cwt.

Otto of Rose.—Our Kezanlik correspondent, under date August 7, writes that "there is nothing of interest to report this week. As far as the Bulgarian market is concerned, one may say that this season's campaign is already over. The campaign has now shifted to the consuming markets, whither the exporters have gone. The market here will continue stagnant, with stationary prices, until next spring. There are no more ardent buyers, and all exporters seem disinclined to invest in further supplies unless they first dispose of their large holdings. It is quite apparent now that over one-fourth of the total otto-of-rose output will be carried over for next year as surplus stock, due to rash speculation and wide sophistication. The average prices of this season for good otto have ranged from 18*s.* to 21*s.* per oz. The speculators and sophisticators have again played their old game at the opening of the campaign, but they retired very soon from the scene of action and came out of the fray even worse than last year. Your

editorial in your Jubilee Issue was most welcome to all true advocates of pure otto, and it has caused deserved consternation among our speculators and sophisticators. The inquiries from abroad continue very meagre indeed, and, as far as can be gathered from hearsay, no big deals in otto have as yet been reported from the consuming markets. Nothing is also expected from the American market this year, which is at a big discount. As all the surplus stock of Bulgaria and Europe was shipped there last spring on account of the new Tariff Bill, it is not expected that orders for new otto will be forthcoming before next year."

Pepper (Black).—At auction 77 bags Singapore sold without reserve at 3*d.* for greyish, and of 83 bags Ceylon 24 sold at 3¾*d.* for heavy bold and 3⅛*d.* for fair. Tellicherry was bought in at 3⅝*d.* to 3½*d.* Privately the market for arrival is quiet, the sales including Singapore June-August shipment Continent at 3 1/16*d.* The spot price is 3¼*d.* for Singapore.

Pepper (White).—At auction 22 cases and 311 bags Singapore were offered and 143 bags sold without reserve at lower prices, including fair at 4⅞*d.* to 5*d.* Cases were bought in at 8*d.* to 9*d.* for good. Privately the arrival market is quiet and unchanged. Singapore September-November shipment quoted 4 3/32*d.*, and January-March 4 13/16*d.* c.i.f. d/w. The spot price is 5¼*d.*

Pimento.—Quiet, with small sales in auction at 2¼*d.* Privately 21*s.* 6*d.* c.i.f. is quoted for distant shipment.

Quicksilver.—Quiet at from 8*l.* 1*s.* to 8*l.* 5*s.* per bottle from second and first hands respectively.

Quinine.—There is a fair consumptive demand at unaltered values, the Convention price of German sulphate remaining at 7½*d.* per oz. in bulk, second-hands quoting 6⅞*d.* to 7*d.* as to age; while the quotation for Amsterdam is 6⅝*d.* and Java 6½*d.* per oz. Imports last month were 309,674 oz., as against 214,576 oz. in July 1908; imports for the seven months ended July 1909 amount to 1,442,990 oz., against 594,498 oz. for the corresponding period of 1908.

Shellac is again firmer, with moderate sales of TN Orange on the basis of 75*s.* for fair free.

Turmeric.—Bengal is quoted 19*s.* spot and 15*s.* 6*d.* c.i.f. for arrival. Cochin split bulbs are worth 13*s.* 6*d.* spot.

Turpentine is practically unchanged on the week, closing at 37*s.* for American on the spot.

Wax, Japan, is steady at 46*s.* to 46*s.* 6*d.* per cwt. spot and 42*s.* c.i.f. for arrival.

London Drug-auctions.

An exceedingly dull and lifeless tone prevailed at the drug-auctions to-day, the oppressive weather rendering buyers listless. Cape aloes was inclined to the easier side, the offerings being more or less soft owing to the hot weather. Sumatra benzoin, the only description offered, was easier. Buchu-leaves were full up. Cardamoms sold at irregular rates, the bold sizes being neglected and easier, but medium and splits were full up to 1*d.* dearer. Dragon's-blood was neglected, and Jamaica honey was steady. Ipecacuanha is quiet but firm. Rhubarb is also quiet, small sales of Shensi being made at unaltered rates. Grey Jamaica sarsaparilla is on the easy side, and native was practically all bought in. New Tinnevelly senna will be offered at the next auctions. Jamaica beeswax improved 2*s.* 6*d.* per cwt., but other descriptions were neglected. The following table shows the quantity of goods offered and sold, the asterisk denoting private sales:

	Offered	Sold
Aloes—		
Cape	42	39
Curaçao (bxs.)	6	6
Socotrine (kegs)	19	0
Zanzibar (cs.)	12	0
Ambergris (pkgs.)	4	0
Ammoniacum	5	5
Aniseed	27	0
Annatto-seed	57	0
Araroba	8	8
Asafetida	10	0
Balsam (Peru)	20	0
Balsam tolu	18	0
Benzoin—		
Sumatra	196	64
Buchu	10	10
Calumba	85	0
Camphor (Ch. cr.)	14	0
Camphor (Jap.ref.)	13	0
Camphor (pdr.)	5	0
Canella alba	3	0
Canthar ides	5	0
Cardamoms	421	173
Cascara sagrada	336	0
Cascarilla	32	0
Cassia fistula	2	2
Chamomiles	3	0
Cochineal	7	0
Coca-leaves	32	32
Colocynth-pulp	12	0
Cubebs	70	0
Cuttlefish-bone	121	25
Dill-seed	69	0
Dragon's-blood	43	0
Elemi	16	0
Ergot	15	10
Gamboge	20	0
Gentian	20	0
Gum arabic	105	*2
Honey—		
Hayti	13	9
Jamaica	201	132
St. Lucia	57	0
Insect-flowers	5	0
Insect-powder	7	0
Ipecacuanha—		
Cartagena	17	0
Matto Grosso	9	*2
Kamala	4	1
Kola	19	19
Lime-juice	26	0
,, (conc. W.I.)	2	0
Mastich	2	0
Musk, Cabardine (tin)	1	0
Myrrh	88	5
Nux vomica	220	*20
Oil—		
anise, star	9	9
bay	2	0
cod-liver (Norw.)	15	15
eucalyptus	30	0
gurjun	15	0
lemongrass	20	0
lime (W.I.)	6	2
orange	3	0
peppermint	13	0
Orange-peel	17	0
Orchella weed	197	0
Orris (Mog.)	9	0
Quillaia	40	0
Papain	2	0
Patchouli-leaves	21	0
Rhatany	4	0
Rhubarb (China)	61	8
Saffron (cs.)	1	0
Sandalwood	55	0
Sarsaparilla—		
Grey Jamaica	42	13
Honduras	6	0
Lima Jam.	11	3
Mexican	10	2
Native Jam.	28	0
Seedlac	242	38
Senega	5	0
Senna and pods—		
Alex.	64	7
Tinnevelly	15	5
Soya-bean oil	4	0
Sticklac	52	0
Tamarinds	87	*15
Tonka beans	3	1
Tragacanth	1	1
Turmeric	322	0
Wax (bees')—		
Abyssinian	16	0
Cape	8	6
Chilian	15	0
Cuban	13	0
East African	15	0
East Indian	108	2
Jamaica	31	28
Madagascar	76	34
Mombasa	16	0
Morocco	31	0
Spanish	39	0
Zanzibar	150	0
Wax, veg. (Jap.)	25	0

Aloes.—Cape showed no material change, and as the bulk was more or less soft, due to the hot weather, buyers were not very keen. The best quality proved to be 11 cases Algoa Bay aloes, which sold on "estimated tares" at from 23*s.* 6*d.* to 29*s.* for good bright hard, 28*s.* for fair slight drossy, and 17*s.* 6*d.* for an odd lot of broken. Nineteen cases of Mossel Bay (usual 20 per cent. tares) sold at 30*s.* 6*d.* for good bright firsts, but slightly soft; 28*s.* 6*d.* to 29*s.* for fair bright, slightly soft; 26*s.* 6*d.* to 27*s.* 6*d.* for dull and softish; and 25*s.* for dull soft. Six boxes Curaçao offered and sold at 45*s.* for dull coarse livery, and at 31*s.* for capey.

Ammoniacum.—Five bales of good pale slightly blocky drop sold at 66*s.* per cwt.

Araroba.—Eight cases containing 59 per cent. chrysophanic acid sold at 1*s.* 1*d.* per lb. subject.

Balsam Peru.—Twenty-one cases have arrived from Acajutla per *Orinoco*; 6*s.* 9*d.* was asked in auction to-day.

Balsam Tolu.—In auction 10*d.* was wanted for 18 cases fair, slightly softish, 9*d.* for slightly drossy, and 8*d.* for drossy.

Benzoin.—The sales were confined to a string of 64 cases Sumatra seconds, which sold cheaply at from 5*l.* 7*s.* 6*d.* to 5*l.* 10*s.* for fair almondy, with partly storax flavour and slightly false-packed sides, and at from 5*l.* 2*s.* 6*d.* to 5*l.* 5*s.* for slightly inferior quality.

Buchu maintains its price, 1*s.* 5*d.* to 1*s.* 6*d.* being readily paid for 4 bales for fair green round, while for 3 bags common small yellowish 1*s.* 1*d.* was paid; small ovals and brown longs (3 bags) were taken at 8*d.*, subject.

Camphor (Refined).—Privately, Japanese 2½-lb. slabs are quoted 1*s.* 6¼*d.* to 1*s.* 6½*d.* per lb. c.i.f. for near at hand, and 1*s.* 7*d.* c.i.f. for distant shipment. At auction 3 cases 1-oz. Japanese refined tablets were bought in at 1*s.* 9*d.*—a bid of slightly less is to be submitted; ¼-oz. were obtainable at 1*s.* 9*d.*

Cardamoms.—Rather over one-quarter of the offerings sold at slightly irregular prices, the bold sizes being neglected and easier, but small, medium, and splits showed an improving tendency. The following prices were paid: Ceylon-Mysore, extra bold pale, 2*s.* 7*d.*; bold pale, 2*s.*; medium and bold palish to pale, 1*s.* 9*d.* to 1*s.* 11*d.*; small and medium ditto, 1*s.* 6*d.* to 1*s.* 8*d.*; small and medium brown long, 1*s.* 4*d.* to 1*s.* 6*d.*; brown split and pickings, 1*s.* 4*d.* to 1*s.* 5*d.* Indian from Calicut, medium and bold pale, 1*s.* 10*d.*; small and medium pale, 1*s.* 7*d.*;

tiny pale, 1*s.* 5*d.* Mangalore, bold round pale, 3*s.*; small, 1*s.* 8*d.*; tiny pale, 1*s.* 4*d.*; long medium pale, 1*s.* 6*d.*; small ditto, 1*s.* 5*d.*; seed, 1*s.* 7*d.* to 1*s.* 8*d.* *Splits.*—Bold pale, 1*s.* 11*d.*; medium and small, 1*s.* 6*d.* to 1*s.* 8*d.*; and very small, 1*s.* 5*d.* per lb.

Cassia Fistula.—Two bags good bright pod sold at 18*s.* per cwt.

Cochineal.—Fair silver and grey Teneriffe sold at from 8*d.* to 9*d.* per lb., being cheap.

Coca-leaves.—Ten cases, mostly country-damaged Ceylon-Truxillo character, sold at 4*d.* per lb. subject to sellers' approval, and three bales small green Truxillo realised 10*d.* Of Ceylon-Huánuco 17 cases offered and sold at from 8½*d.* to 10*d.* for ordinary brown to fair greenish.

Dill-seed.—Fair East Indian was limited at 14*s.* per cwt.

Cuttlefish-bone.—Ten bales of small broken to fair whole Bombay bone sold at 3½*d.* per lb., and for 5 bales of fair pale, mostly halves, 3½*d.* was paid from another source. Ten cases ordinary dull bold also sold at 1*d.* per lb.

Gamboge.—Two cases of good Siam pipe, slightly blocky, were held at 14*l.* per cwt., at which small sales have been made privately.

Gentian.—Twenty bales fair Spanish were offered, but no response was made to a suggestion of 18*s.* per cwt. Privately, 20*s.* c.i.f. is quoted; it is stated that no new crop will be available for two months owing to the wet condition of the root, and that higher prices may be expected.

Honey.—Jamaica sold steadily, little of choice quality being offered. Fair amber liquid in barrels and casks sold at from 25*s.* 6*d.* to 26*s.*, and dark brown liquid 23*s.* 6*d.* to 24*s.* 6*d.*, fair to good pale set 27*s.* to 30*s.*, dull set 26*s.*, and brown setting 24*s.* Nine barrels good bright amber liquid from Hayti sold at 27*s.*, and rather darkish liquid to fair St. Lucia in cases was bought in at 26*s.*

Ipecacuanha.—Although no business was done in auction, 6*s.* is reported to have been paid privately, this being the figure at which 5 bales were bought in to-day. Cartagena was held at from 4*s.* to 4*s.* 3*d.* per lb., and in one instance the higher figure was refused for good clean stout.

Kamala.—Ordinary quality was limited, at 8*d.* per lb., and a case of common bricky adulterated sold at 4½*d.* without reserve.

Kola.—Nineteen bags of good West Indian dried halves sold at from 2½*d.* to 2¾*d.* per lb.

Lime-juice.—Common brown raw Antigua was held at 1*s.* 1*d.*, and good pale from the island of Montserrat at 1*s.* 3*d.* Apart from the public auction sellers privately ask 1*s.* 3*d.* per gal. for good.

Lime-juice (Conc.).—Three hogsheads of Dominican were limited at 18*l.* per 108 gals.

Mastich.—Slightly specky tear was held at 2*s.* 2*d.* per lb.

Myrrh.—A single case of good siftings sold at 44*s.*, and 4 cases of dust at 24*s.* per cwt.

Nux Vomica.—Twenty bags had been sold privately, and for 20 bags fair, bold, silky Tellichury were retired at 11*s.*

Oil, Aniseed, Star.—Nine cases sold at 4*s.* 1*d.* per lb., subject; cases being more or less stained.

Oil, Lime.—Two cases of expressed Dominican of good quality sold at 5*s.* 6*d.*, and at 1*s.* 9*d.* for distilled. Privately, 1*s.* 11*d.* is quoted.

Rhatany.—Four bales fair Peruvian were bought in at 8*d.* per lb.

Rhubarb.—Quiet. Two cases of Shensi pickings with three-quarters good pinky fracture sold at 1*s.* 4*d.*, and two cases medium round Shensi with good three-quarters realised 2*s.* 4*d.* Small round and druggists' trimming root was bought in at 2*s.* 6*d.*, and bold flat High-dried, with three-quarters fair pinky fracture, was held at 1*s.* 1*d.* per lb., and small round horny High-dried was bought in at from 5½*d.* to 6*d.*

Sarsaparilla.—The moderate quantity of grey Jamaica offered met a flat market, only 10 bales selling at 1*s.* 3*d.* for the pick of the 42 bales, being the same price as paid a fortnight ago; slightly coarse was obtainable at 1*s.* 2*d.* Native was also in heavy supply, and as holders would not reduce substantially their limits only 3 bales changed hands at 1*s.* for fair red and 10*d.* for dull. Two bales ordinary Lima sold at 1*s.*, one bale sea-damaged at 10*d.*, and two bales coarse Mexican at 4½*d.* Honduras crown CB was held for 1*s.* 8*d.* per lb.

Seedlac.—Thirty-eight bags of pale Karachi were forced off at 60*s.* per cwt.

Senega.—Five bales of good quality on auction were held at 1*s.* 9*d.* per lb.

Senna.—Ordinary broken Alexandrian leaf was bought in at 3*d.*, and palish flimsy pods were obtainable at from 4¾*d.* to 5*d.* Six bales of pale pods sold at 6*d.*, and one of pods, leaf, and stalks mixed at 1½*d.* per lb. Several hundred bales of new Tinnevelly leaf will probably be offered at the next auction, consignments to hand this week not having been landed in time.

Tamarinds.—Privately, sales of Antigua have been made in bond at 10*s.* per cwt., and the value of East India black is 12*s.* to 12*s.* 6*d.* for good.

Tonka Beans.—A single case of ordinary foxy Para sold at 1*s.* 7*d.* per lb.

Wax, Bees'.—Jamaica was in good demand, 23 packages selling at from 7*l.* 17*s.* 6*d.* to 8*l.* per cwt. for dark to good bright red and brown mixed. Dull bleached Calcutta was retired at from 6*l.* 10*s.* to 6*l.* 15*s.*, and for fair Zanzibar block 6*l.* 15*s.* was wanted; 34 packages fair yellow part dark Madagascar block sold at 6*l.* 12*s.* 6*d.* per cwt. Six cases good bright yellow and red Cape changed hands at 7*l.* 10*s.*

Continental Drug and Chemical Market.

Camphor (Refined).—A French report states that refiners have petitioned the Customs Commission to increase the import duty by 30f. per 100 kilos. on refined camphor. It is also stated that it is the intention of the Japanese monopoly to increase the price of crude from October 1 next. The market has already been influenced by these reports, and prices of refined have risen about 6 to 8 per cent. as compared with a month ago.

Carnauba Wax is quiet, with rather more demand for current grey qualities, the first-hand quotation for which has advanced by 2.50m. per 100 kilos., but from second-hands 183m. to 184m. will still buy. Fatty grey is offered at 183m., but yellow qualities are very scarce.

Citric Acid.—Sales in Hamburg have taken place at the existing cheap prices, and for the time being nothing is obtainable from second-hands under 270m. per 100 kilos.

Hydrastis.—The first supplies of new crop have arrived in Hamburg and found a ready market at high prices. Spot goods are not to be had under 19m. per kilo., while for forward deliveries 17.25m. to 17.50m. is quoted.

Iodine.—A French maker who is outside the International Convention offers crude iodine at 21.50f. per kilo. and resublimed at 25.50f. per kilo. in barrels of 20 to 30 kilos. or 50 kilos.; in original jars 50c. per kilo. extra is quoted.

Japan Wax is somewhat easier in Hamburg, and, with an actual order in hand, good pale squares could probably be bought at 83m. per 100 kilos. for August-September shipment in 50-case lots. Spot is offered at 86m. to 86.50m. per 100 kilos.

Lycopodium.—The reports which have been spread by Russian firms for some time past with regard to the bad harvest appear now to be really confirmed, as some large purchases have been effected on this supposition. Prime double-sifted in cases is quoted at 4.45m. per kilo., and bags at 4.40m.

Milk-sugar.—The demand has considerably decreased of late, so that the transit prices, owing to the undercutting of foreign makers, have become more and more depressed. As imports of foreign goods were feared despite the high duties, the German makers in Güstrow have decided to lower prices by 10m. per 100 kilos.

Soda Hyposulphite.—Keen competition has broken out, which will probably result in a marked fall in prices, with the object of obtaining business at any cost. The full extent of the decline is not yet known, but the present value of 11m. to 12m. per 100 kilos. Hamburg is expected to be considerably reduced.

Persian Galls.—The export of galls from the Port of Basra and Bagdad during 1908 amounted to 5,297 bags (33,106*l.*), against 6,015 bags (36,090*l.*) in 1907 and 9,007 bags (49,538*l.*) in 1906.

Honduras Sarsaparilla.—The exports from Honduras from July 1907 to July 1908 amounted in value to 4,639*l.*, against 3,691*l.* for the corresponding period of 1906-7, the average value during the previous five years being 3,754*l.* There is an export-duty of 3 dols. gold per 100 lb.

Correspondence

TO CORRESPONDENTS.—A letter for publication should always be a distinct communication; nothing else should be mixed up with it. Each query - no matter whether legal, dispensing, or general—should stand by itself, and the paper upon which it is written should always be backed with the shop stamp. We do not undertake to reply to queries by post. Write clearly and concisely on one side of the paper only. All communications should be accompanied by the names and addresses of the writers. Publication of letters does not imply our agreement with them. Letters received after Wednesday morning cannot as a rule be dealt with in the current week's issue.

BUSINESS INFORMATION.—We supply by post (when a stamped and addressed envelope is provided) information as to the makers or agents for articles connected with pharmacy and the chemical and drug trades. Inquiries regarding any articles which cannot be traced are inserted under "Information Wanted."

C. & D. Jubilee.

SIR,—I am happy to testify to the great value the *C. & D.* has been to us in Queensland. It has been always faithful and helpful to our Pharmaceutical Society, and has been a sort of rallying-point when at times the Society was languishing and required a stimulus. We owe it a great debt of gratitude. In educational matters both the *C. & D.* and *The Chemist and Druggist of Australasia* have been of the greatest assistance, while individually the journals must have been a help to every pharmacist who received them. Yours, etc.,

Brisbane, Queensland. GEO. WATKINS.

SIR,—It is not a simple matter for the modern pharmacist to say what the *C. & D.* is to him and does for him. It existed before he was born, or, at any rate, before he took any interest in the work with which it deals. As in the case of the telephone, the mature person remembers the day of postage and special messenger, and regards the quick and hundredfold service of the telephone as a distinct step in the march of progress. To children, however, it is the most natural thing in the world. In the same way the *C. & D.* is of special or general utility to the reader. The busy pharmacist is saved expense on legal points, adds to his income on proprietaries, obtains suggestions as to dispensing, and is placed in the way of ready communication with manufacturers and merchants. The student, the lecturer and demonstrator, the advanced scientist, the pharmaceutical leader and philanthropist, every week receives information on the matters pertaining to his particular study and interest. The *C. & D.* condenses current history, epitomises and reflects the activity of the pharmacy of the world. Time and distance have no effect on the utility of the *C. & D.*: what it has been and is to the English reader it has been and is to the Australian. If policy and progress reports sway the pharmaceutical interest in England, we in Australia know it in a few weeks, and opinion is shaped accordingly. To Australians, however, there is something more, since about twenty-three years ago it established THE CHEMIST AND DRUGGIST OF AUSTRALASIA, giving new life and quickening of thought to such authoritative pharmacy as existed in Australasia by its liberal policy of providing Societies with their own journal.

Yours truly,
J. H. YOUNG,
Registrar of the Pharmacy Board.

Adelaide, South Australia.

SIR,—The knowledge that THE CHEMIST AND DRUGGIST reaches its Jubilee this year sets one reflecting! What a vast change has taken place in the paper! Only a few days since I had one of the numbers in my hand which dated back into the early 'seventies. I have read the *C. & D.* pretty regularly since that time, and the advancement is astonishing. It has always interested me, and I remember that years ago, when it arrived with other journals, I always pulled off the wrapper of the *C. & D.* first. At that time I was serving my apprenticeship in the Isle of Wight, and although we closed at 7 P.M. one of us remained on duty until 8 P.M., and that hour was generally spent in reading the trade journals. How the *C. & D.* has grown in size and usefulness—usefulness to the student, to the beginner in business, and to the pharmaceutical politician both at home and abroad! How it has helped and stimulated the Pharmaceutical Societies everywhere! The persistent criticism of the *C. & D.* did more to wake up the British Society than any other means. It induced a set of "brainy" men to come out and contest seats on the Council, and showed the trade where they were weak and behind the times. Later it has entirely changed the mode of conducting the drug-business by publishing new ideas, new formulæ, and enabling the young man just entering business to compete with old-established businesses. Since then other journals have changed their tactics and endeavoured to improve their methods, but the *C. & D.* has gone on improving and kept advancing until now with its Summer and Winter Issues and its *Diary* it has reached a very high pitch in pharmaceutical journalism. To the pharmaceutical societies in Australasia the *C. & D.* has been of great assistance. If I were asked what interested me in the London *C. & D.*, I should say: (1) The excellent market and drug-auction reports, (2) "Observations and Reflections" by "Xrayser," (3) Pharmaceutical Society of Great Britain, (4) Westminster Wisdom, (5) English News, and (6) Personal items. The editorial comments are always worth careful reading. In my student days the "Students' Corner" was of the greatest interest, and I derived from it a great deal of assistance. By reading the *C. & D.* regularly and as soon after its arrival as possible, I have been able to keep abreast of the times and to follow the careers of many of my old-time friends and fellow-students, so that at this distant outpost of our glorious Empire I have not felt at all "out in the cold." Long life and prosperity to the *C. & D.*

Yours faithfully,

Hobart, Tasmania. H. T. GOULD.

SIR,—I have been greatly interested in reading the account of the gradual enlargement of the journal and sincerely congratulate you on the excellent result. The journal is a great boon to the trade, containing as it does most useful information. Yours truly,

Stafford. J. AVERILL.

SIR,—Allow me to offer hearty congratulations on the issue of your Jubilee Number. I have only had a hurried glance through its pages, but can see the result of a vast amount of time and thought displayed to the best advantage.

Yours sincerely,

Braemar, N.B. A. R. CLARK.

The Leipzig "Drogisten Zeitung" thus refers to THE CHEMIST AND DRUGGIST Jubilee Number: "Our English colleague THE CHEMIST AND DRUGGIST has published a Jubilee Number on the occasion of fifty years' existence of the paper, which, both as regards 'get-up' and contents is absolutely unique. The stately volume weighs over 1½ kilo., and contains richly illustrated literary pages, together with many interesting scientific articles and practical information. A facsimile of the first copy of the paper issued, a modest octavo booklet, is of special interest. The Jubilee Number contains over 200 advertisement-pages, while many firms have issued special insets, which are in many instances brilliant achievements of the printer's and publisher's arts. The art of advertising in commercial papers has reached a high grade of excellence in England, both as regards efficacy and elegance."

Private *v.* Store Assistants.

SIR,—Jay Mack is compelled to say that Boots employ the best men because he was one of them himself for twelve years. If he will now alter what he thinks wrong, and not sneer at the education and training he has undergone, and become an organiser or thinker, I will believe him to be one of the best, but not until then. At the present time he can apply his Minor knowledge to his business unless it has all evaporated during the twelve years at the cash chemists'. I was with a private West-end firm for five years, and now look back upon that

period with pleasure at the thorough knowledge I obtained there. We did not hand over the counter preparations of which we knew nothing—they were made on the premises; no commission was given to assistants on our proprietaries, hence no quackery was induced; dispensing was strictly accurate, and the object aimed at was an application of the knowledge one had gained in studying for examination. Perhaps the living was not quite as good as it might have been—there is always a fly in the ointment—but the knowledge gained was worth that consideration. I maintain that we want men who are thorough—not automatic, as I am convinced stores assistants are.

Yours faithfully.

Verb. Sap. (133/15.)

Sir,—Jay Mack's letter in your last issue (p. 275) refers to the drug-trade having passed through twenty-five years' modernising. Quite true, but the fact remains that the present state of affairs leaves a qualified, competent, and steady man (and he must be young) nothing but, as he expresses it, the "fascination" of being, if approved of, a manager to a limited company at about 150*l.* a year, perhaps less. What is the outlook for the future—say, in another twenty five years? Well, there may be the old-age pension, perhaps. It seems to me that to eulogise our present position is quite Gilbertian. If Jay Mack can help his comrades by any suggestion of real improvement in our present narrow surroundings, he will indeed be doing the State some service.

Yours respectfully,

Pharmacist. (133/26.)

The Proprietaries Puzzle.

Sir,—Among the many unsolved problems connected with the drug-trade is the following: Is it better that each chemist should run his own proprietaries under his own name, with more or less original titles and styles distinct from those of his colleagues, or should he push proprietary articles (but not cut patents) supplied to the trade by manufacturers? The advocates of the first theory hold out the elusive and mysterious something—the chemist's individuality—as a reward to those who adopt that course. We are told that if we sell goods differing from those of our *confreres* we shall compel the people to come to us, whereas by selling a preparation stocked by other chemists we are unable to prevent customers going at times to our rivals. But if three chemists, A, B, and C, are each selling, *e.g.*, "Pink's Pious Piffle," what is there to prevent A's customers going to B and C, where they can obtain the identical article? And thus A loses and the others gain. But the customers of B and C will also probably wander into A's shop at times, so that in the long run each man will sell as much as he would if all were pushing rival goods. But the gain above this is the cumulative effect on the public mind when simultaneous window shows take place. The article so shown at once takes its place as a standard line; it becomes known. Drug-companies, whether they have five, fifty, or five hundred shops, take care to run the same proprietaries in all their shops, which seems to be a further argument in favour of the non-individual plan. As there is much to be said on each side, I should be glad to have the opinions of more experienced pharmacists, so that, if possible, this problem may be solved.

Yorkshire Bite. (4/8.)

The Conference.

Sir,—In the *C. & D.*, July 31, p. 212, in the report of the proceedings at the British Pharmaceutical Conference, I am reported to have said "paying pharmacy." What I did say was "company" pharmacy. Further on, "the subject was not one to create enthusiasm" instead of what I did say—"the subjects touched on in the address were not open to criticism at the moment."

Yours faithfully,

Dublin. J. Smith.

Halogen-absorption of Oils.

Sir,—In a communication made on the above subject to the British Pharmaceutical Conference (*C. & D.*, July 31, p. 230), Messrs. Remington and Lancaster express themselves somewhat strongly in favour of the bromine method, which McIlheney endeavoured to resuscitate in 1899, and further quote experiments purporting to show that the results of the Wijs method are dependent upon the excess of halogen used. With regard to this latter point, their conclusions would appear to be at variance with general analytical experience. Before the Nottingham Section of the Society of Chemical Industry in 1902 (see *C. & D.*, November 8, 1902, p. 800) I read a paper giving a series of experiments upon olive, rape, linseed, neatsfoot, sperm, and cod-liver oils, showing that variations of excess halogen from 33 to 66 per cent. made no material difference to the result, and that an excess of 50 per cent. was ample. The term *x* per cent. halogen in excess is ambiguous, and is used by Wijs in the following sense: If from 100 parts total halogen 25 parts are absorbed, the unabsorbed portion—viz., 75 parts—constitutes an excess of 75 per cent.; this is the sense in which I have used the term in my papers. Some analysts, on the other hand, consider this an excess of $(\frac{75}{25} \times 100)$, or 300 per cent. On whichever system Remington and Lancaster have calculated their excess halogen, their results entirely disagree with my own. Further, Lewkowitsch ("Analyst," 1900, p. 34) gives a number of estimations made by the Wijs method on linseed and other oils in which the excess halogen was varied from 50 to 77.5 per cent. with nearly identical results. With reference to the old bromine method revived by McIlheney, it is difficult to understand Remington and Lancaster's comments upon it when they say, "By the bromine process the absorption of the halogen by addition is determined separately from the absorption by substitution, whereby additional information is gained as to the nature of the oil, fat, or resin under examination," at the same time demonstrating that the bromine-substitution figure is so small as to be negligible. Hence the only advantage of bromine methods may be said to be in their rapidity. But Remington and Lancaster's experiments show that McIlheney's bromine process gives very low results with drying oils (13 per cent. low). This accords with the experience of Marshall, who obtained a figure on linseed oil of 140 against 178 (Wijs) ("Journ. S.C.I.," 1900, p. 214). It does not, of course, follow that the method giving the highest figures is the better method—the method that should be favoured is that which results in a maximum of addition with a minimum of substitution, and gives a true measure of the degree of unsaturation. These conditions are certainly not fulfilled by bromine solutions. Wijs' solution, on the other hand, appears to answer them remarkably well. In the old days, when Hübl solution held the field and the reactions were complicated by the presence of alcohol, etc., some substitution possibly took place, and Schweitzer and Lungwitz accordingly sought to estimate the degree of substitution from the amount of free acid formed. The amount of acid formed has, however, been shown by Ingle ("Journ. S.C.I.," 1902, p. 587) to be no measure of substitution, as it arises from the action of water upon the iodochlorides. It is therefore futile to attempt to measure the substitution in this manner. Wijs, moreover, has shown that his solution yields practically theoretical figures with unsaturated fatty acids, such as erucic, brassidic, elaidic, oleic, etc. ("Analyst," 1899, p. 96).

Yours faithfully,

Nottingham. T. F. Harvey.

Federation Meeting.

Sir,—In your condensed report of my reply to the discussion on p. 253 of the *C. & D.*, August 7, there is a slip which I should like to correct. I have no right whatever to say what view Mr. Peck may take of the Edinburgh proposal, and could not possibly have said, "He knew that Mr. Peck was enthusiastic about the idea." What I said was, "Do not assume that the Executive will be antagonistic. Members of it are known to be in sympathy with the work of the Federation, and one of the most energetic and enthusiastic Secretaries the Federation ever had is Mr. Peck, the senior Secretary of the Conference." As a matter of fact, I do not know the view of Mr. Peck or any other member of the Conference Executive, and I merely wished to suggest that when the deputation wait upon the Executive they may be assured of a fair, unprejudiced, and friendly reception.

I am yours faithfully,

Edinburgh. J. Rutherford Hill.

A Good Example.

Sir,—An unknown correspondent has sent to us a copy of our price-list dated April 15, 1868. The postmark on the wrapper is Guernsey. We shall be glad if you will insert a notice in your next issue thanking the sender for

same. It looks as if the publication of the replica of the first number of the *C. & D.* had instigated the sender to forward us this old copy of our list.

Yours truly,

Evans Sons Lescher & Webb, Ltd.

Store-prices.

Sir,—This morning a lady brought in a prescription for "Bipalatinoids (O., S. & Co.) No. 581," asking what we should charge, as she found things very dear in Malvern. On looking up Messrs. Oppenheimer's list, they are quoted at 42*s.* per dozen gross bottles, whereupon I quoted the lady 6*d.* per dozen (at which price we had to copy the prescription, provide label, box, envelope, etc., to say nothing of assistant's time). She took her prescription back, saying it was ruinous, and that she must write to the Army and Navy Stores, where she could obtain a gross bottle for 3*s.* 6*d.* If Messrs. Oppenheimer should see this letter, perhaps they will tell us poor chemists how we are to live. Yours,

Malvern, July 28. Wondering. (123/53.)

[The Stores sell some things on a profit-basis of the maker's discounts, but they are not accustomed to dispense at the same rate.—Editor *C. & D.*]

Letters in Brief.

The Price of Apenta.—*Mr. W. A. Bingham*, Bournemouth, writes in regard to the protected price of Apenta: "Surely if the Apollinaris Co. are strong enough to protect the retail price of Apenta-water, they might have fixed it at 1*s.* just as well as at 11*d.*; or do they consider a profit of 5*s.* per case of twenty-five bottles excessive?"

Apothecaries' Assistants.—*Justice* (132/59) writes at great length in regard to the difference between a Minor man and an Apothecaries' Assistant. His point of view is that "there is just about as much difference between the two as there is between the M.D. and the L.R.C.P. and M.R.C.S. The Assistants' qualifications give power to act as dispensers, and both are accepted by the Local Government Board, Metropolitan Asylums Board, and hospitals generally." "Justice" disclaims any intention of taking the title "pharmacist," but he wants the Pharmaceutical Society to register him. "Let us be just all round," he adds.—*An Old One* (131/24), writing in a similar strain, but with poor regard for orthography, asks, "Why should the examination for a chemist be restricted to one Society? There are different degrees in the medical profession, some of them easy to pass, some very hard, but they are all allowed to practise as medical men."

Dispensing Notes.

A Difficult Inhalant.

Sir,—Please say how the following should be dispensed:

Benzol	ʒij.
Ol. cassiæ	ʒj.
Mag. carb.	gr. x.
Aq. ad	ʒiij.

Ft. sol. ʒj. ad Oj. aq.

The benzol, oil of cassia, and water formed a conglomerate mess which could not be diffused in the water.

Yours faithfully,

Pageant. (26/7.)

[The quantity of magnesium carbonate ordered is too small—not enough to absorb and diffuse the oil. Inhalation of fir-wool oil of the 1885 Pharmacopœia contained 20 grains of light magnesium carbonate, in 1 fl. oz. When used in this proportion in the above prescription an elegant preparation is obtained, and with the 1885 Pharmacopœia as your authority we do not think you should hesitate to employ this quantity. Rub the oil with the magnesium carbonate, add gradually the water, and lastly the benzol.]

A Quinine Mixture.

Sir,—The mixture made from the following prescription has been compounded in different ways, and varied in colour each time. Can you give us your opinion as to how it should be dispensed? Yours truly,

Ergot. (6/8.)

Quin. sulph.	gr. xl.
Liq. strychninæ	♏lxxx.
Ferri tartar.	ʒij.
Spt. chlorof.	ʒij.
Syr. limonis	ʒj.
Aquam ad	ʒviij.

[It is true that this mixture when compounded in various ways has a different appearance when newly made. We find that on standing for twenty-four hours all come to be nearly alike, having a yellow precipitate and a supernatant liquid about the colour of afternoon tea. The precipitate varies in bulk according to the different methods of compounding. It also varies in character, being fine, coarse, or curdy. The more bulky the precipitate, the lighter in colour is the mixture when shaken up. The bulky precipitate is not, however, the finest. As there is no getting away from the precipitate, the best thing to do is to get it as fine as possible. This is attained by the following procedure: Rub up the tartarated iron and the quinine sulphate together, add the syrup of lemon gradually with trituration, then the solution of strychnine and the water, lastly the spirit of chloroform. The precipitate so obtained shakes up satisfactorily, and the mixture is quite suitable to send out. The quinine causes the precipitate. The mixture without it is quite clear, and it will take up part of the quinine without precipitation. It appears to be a case of salting out of quinine citrate. It is well to follow the same procedure every time, so that repeat mixtures may be uniform—at any rate, from the same establishment.]

Legal Queries.

Before submitting questions for reply in this section please refer to the "C. & D. Diary, 1909" for the following subjects: Income-tax, p. 220; Pharmacy Law and Poisons, p. 216, (abroad) p. 211; Spirit Laws, p. 229; Stamped Medicines, p. 221; Trade-marks, p. 194; Wines, Sale of, p. 231; and Legal matters generally, p. 233.

Oakhurst (131/33).—"Medical Analyst" is not a protected title, but the meaning is somewhat vague.

A. W. P. (132/42).—Any person can use red poison-labels; the employment of such labels is not restricted to chemists.

H. W. (127/3).—Arsenical Fly-papers, being non-medicinal, are in Part 2 of the Poison Schedule of the Poisons and Pharmacy Act.

L. A. H. (125/36).—An assistant of the Apothecaries' Hall of Ireland may not legally sell poisons in England, nor can he manage a chemist's shop.

Optics (130/64).—You cannot raise the price of the spectacles in the County Court summons, you can only sue for the amount you have demanded up to now.

H. J. (128/22).—Partnerships are dissolved by deed, which a solicitor prepares. It is also necessary that the dissolution be well advertised (in the "Gazette" and trade-paper), or the retiring partner may be liable for debts incurred after his retirement.

J. F. (131/37).—Lotio hydrargyri nig. can only be sold by qualified chemists. It is in the second part of the schedule of the Poisons and Pharmacy Act. The mineral acids can be sold by anyone if labelled "Poisonous" and with the name and address of the seller.

G. E. O. (132/9).—The name and certificate of qualification of the registered chemist managing a pharmacist's business must be exhibited in the shop. You ask us why this is not done in branch shops in London. We can only say that it is an offence against the Poisons and Pharmacy Act not to do so.

H. H. (129/26).—You will see in this issue the conditions under which candidates enter for the Minor examination of the Pharmaceutical Society. Apprenticeship is not necessary, but the candidate must have been for three years engaged in the dispensing of prescriptions. The fee of two guineas for registration as a student is necessary.

Trade-mark (125/32).—The fact that you have previously used a trade-mark for which an application has been made for registration is ground for objecting to the registration. Your objection must be lodged with the Comptroller within a month of the advertisement appearing, and must be on a form which is stamped with a 20*s.* stamp. See *C. & D. Diary*, p. 194.

H. T. P. (132/63).—The Superintendent of a company's business is the person who has "control and management," and such company may use the title "chemist and druggist" if the superintendent is a member of the board of directors. He must not act in a similar capacity for more than one company. He may also be the manager of the shop, or the company may employ another qualified chemist as manager. It does not seem to be illegal for a chemist who manages a shop for himself and displays his certificate therein to be also the superintendent of a company, provided a qualified manager is employed.

Miscellaneous Inquiries.

We endeavour to reply promptly and practically to trade questions of general interest, but cannot guarantee insertion of replies on a particular date, nor can we repeat information given during the past twelve months. A preliminary condition for reporting on samples submitted is that all particulars as to source and uses are given to us.

Oxoniensis (123/10) asks if anything is used for making the eyeball of a dog darker. We cannot think of anything except atropine, and that can only be used for temporary purposes; but it will be bad for the dog.

M. W. (123/37).—Tonic for Expectant Mothers.—A mixture of 2 parts of Parrish's syrup and 1 part of syr. hypophos. co. is better than Parrish's syrup alone. Good dieting is better than medicine, however.

Dental (113/63).—Liquid Depilatory.—The two varieties in use are: (1) Liquor calcis sulphuratæ or liquor potassæ, which act as softeners or solvents of the hair; (2) collodion containing iodine which is partly mechanical. These preparations are not altogether satisfactory, and often induce a severe dermatitis.

Syrupus (129/29).—Liq. Violæ Conc. (1-7).—This is a tincture of violet-petals made by macerating 1 lb. of bruised violets or pansies with 5 lb. of weak alcohol for five or six days, then straining, pressing, and filtering. The alcohol coagulates the vegetable albumen, and is also an excellent solvent of the colouring-matter of the violets.

Canadian (115/52).—Essence of Winter Stout.—This is used for making an aërated beverage in the proportion of 1 oz. to the half-gallon:

Essence of capsicum	2 oz.
Essence of mixed spice	½ oz.
Essence of vanilla	1 oz.
Essence of ginger ale	10 oz.
Essence of hop ale	16 oz.
Butyric ether	5j.

Mix and filter bright through a filter-paper rubbed with kaolin.

You will find some useful hints and formulæ for brewed temperance beverages in the *C. & D.*, July 28, 1906, and January 26, 1907.

W. T. F. (130/65).—Ginger-ale Essence.—Two good formulæ for this were given in the *C. & D.*, January 26, 1907.

Coffee (116/64).—Preserving Coffee Extract.—For this glycerin is employed in the proportion of about 5 oz. to the gallon, or the extract is saturated with sugar so as to make it into a syrup. The use of salicylic acid or alcohol is not necessary.

R. W. R. (130/31).—What is Essence of Peppermint?—Some three or four years ago this question was threshed out in the *C. & D.*, and the result seems to show that the 1-in-10 essence is now the custom of the trade, although 1 in 8 was the established strength some years ago.

A. E. G. (128/46).—Straw-hat Varnish.—The following is from "Pharmaceutical Formulas":

Orange shellac	3 lb.
Powdered resin	1 lb.
Benzoin	3 oz.
Spirit	1 gal.

Mix and stir occasionally in the course of a few days until dissolved. This can be stained by adding aniline dyes.

J. M. (128/6).—A new edition of the British Pharmacopœia is not expected for some years yet.

J. D. M. (131/66).—Modern Business Methods is the title of a section which appeared in the *C. & D. Diary* for 1906. That and subsequent *Diaries* contain the information needed for candidates preparing for the Fairchild Scholarship examinations.

B. R. M. & Co. (Bombay) (126/26).—(1) Benzoated oil used in formulæ for hair-oil is made by digesting an ounce of bruised benzoin in a pint of almond or olive oil for three hours on a water-bath and passing through grey filter-paper. (2) Saponine is advertised for sale in The Chemist and Druggist and *The Chemists' and Druggists' Diary*. The makers supply information as to the proportions to use for producing foam in beverages.

Ives (111/55); *P. B. D. and S.* (Agra) (125/56).—The following are two recipes for Insect-sting Lotions:

I.		II.	
Menthol	gr. viij.	Carbolic acid ...	gr. xv.
Spirit	5vj.	Iodine	7ss.
Strong ammonia ...	5ij.	Potassium iodide ...	9iv.
Put up in 2-dr. bottles and apply to the bitten spot by means of the stopper.		Distilled water ...	3iij.
		Paint on the part with a camel-hair pencil.	

Central (111/48).—Coffee Flavouring-essence.—We have no formula for this, but are informed that it is prepared from an essential oil obtained by steam-distilling ground roasted coffee-beans. This oil is dissolved in weak alcohol.

Tenax (127/23).—Turnbull's Ointment.—There are two varieties of ointment known under this title, the recipes for which are as follows:

Ung. Aconiti, Turnbull.

Ext. aconiti	2 grams
Adipis	8 grams

An ammoniated variety of this is—

Ext. aconiti	2 grams
Adipis	12 grams
Liq. amm. fort.	15 minims

The other kind of Turnbull's ointment is—

Ung. Rubefaciens, Turnbull.

Pulv. ipecacuanhæ, Ol. olivæ ... ... aa.	5 grams
Adipis suilli	10 grams

J. C. M. (132/21).—Nine Oils:

Ol. origani	5j.
Ol. sambuci	5j.
Ol. camph. ess.	5j.
Ol. eucalypti...	5j.
Ol. sinapis	5ij.
Lin. saponis	5ij.
Ol. dulcis ad...	5xxxij.

Misce.

Grcgory (120/66).—(1) The Excessive Sweating of which your customer complains is a difficult condition to treat successfully. He appears to have been treated on orthodox lines, with iron, arsenic, belladonna, and formalin soap. A number of methods are recommended by various authorities. Crocker has been very successful with sulphur in drachm doses thrice daily. Bathing the feet with a 1-per-cent. solution of commercial formalin has been very successful in the French army. This might be tried for the whole body, but the results would have to be watched, as a dermatitis might be produced. Enveloping the feet in salicylic-soap plaster (3 to 5 per cent.) for a week, and then keeping them dusted with salicylic-talc dusting-powder, 2 per cent., answers well for the feet. This dusting-powder acts well in keeping down the unpleasant smell, as it prevents decomposition of the secretion. Very hot sponging will always arrest the secretion for a few hours, and in the case of ladies is extremely useful when they wish to attend a social function. Formalin ointment—

Formalin	5ss. to 5j.
Lanoline	5ij.
Vaselin	5ss.

—acts well on limited patches, so does the following:

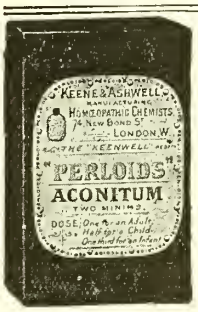
Kaolin	5ss.
Sulphur præcip.	5ij.
Zinci ox.	5iss.
Adipis benz.	5j.

A weak decoction of oak-bark may be sponged over the whole body, and in any case frequent baths and changes of underclothing are necessary (stockings should be changed every day). Any defective condition of the general health, if present, should be attended to, and it is a point not generally known that excessive sweating of the feet is often an accompaniment of flat-foot. (2) Laundry Bleach.—This is generally a solution of chlorinated soda made by the method indicated in the British Pharmacopœia. The method you mention by the use of potassium chlorate and hydrochloric acid is too expensive for a commercial article. (3) You do not say what formulæ you need for the small wholesale business. These are probably all given in "Pharmaceutical Formulas," or you may find them in "Oilmen's Sundries," a little book published by Maclaren & Sons, Shoe Lane, E.C.

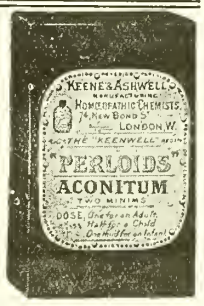
Deafness Instruments.—We have inquiries from several subscribers as to the efficacy of the following instruments for improving the hearing of deaf persons: Electrophone (Stolz Electrophone Co.), Acousticon (Acoustic Patents, Ltd.), Hoffmann's "Earphone" (Shandon Sales Co.). We shall be glad if any of our readers who have experience of one or other of these instruments will communicate their experiences.

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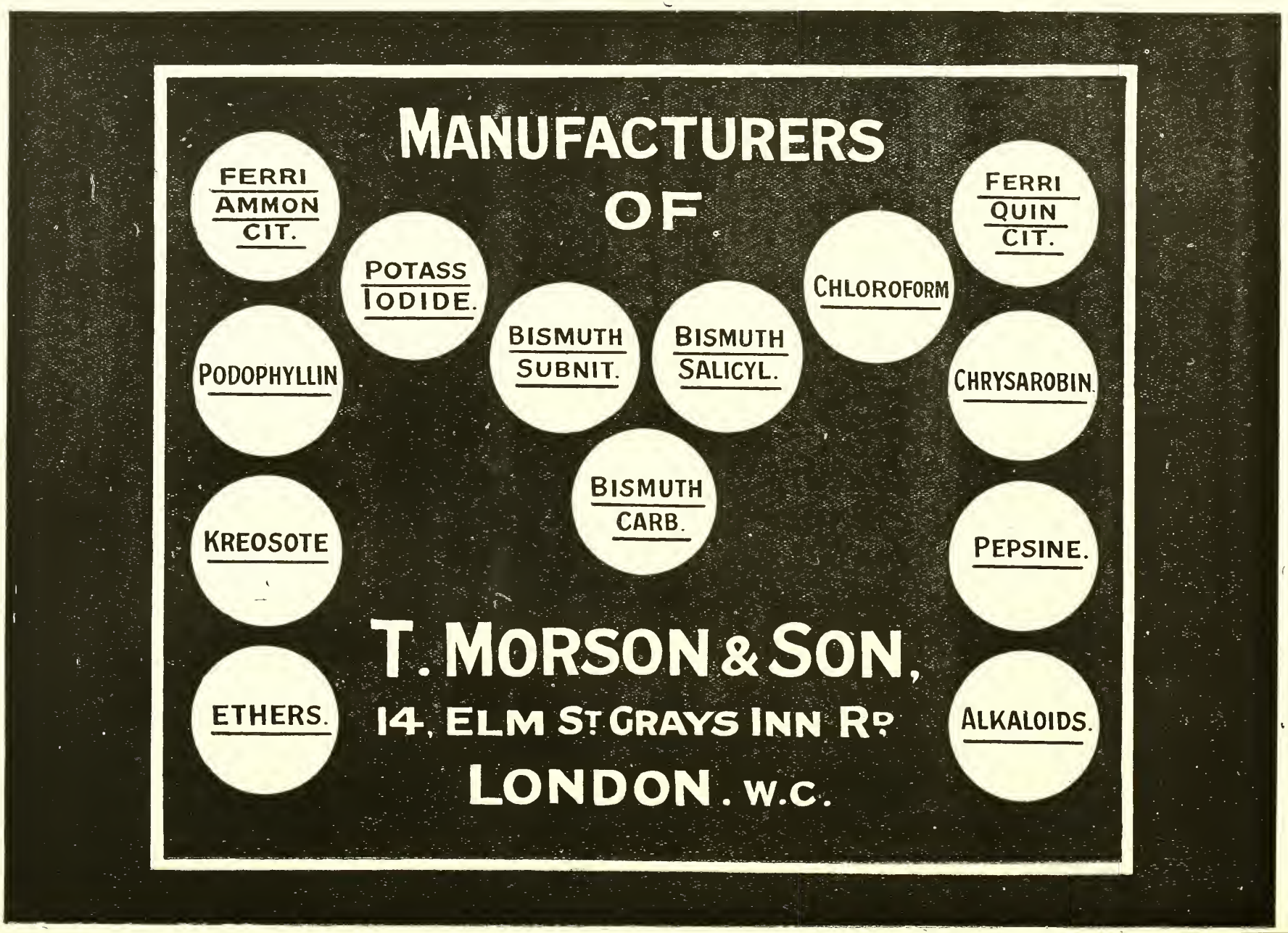
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THE ONLY POSITIVE REMEDY FOR PRURITUS ANI KNOWN.

RESINOL SOAP

ABSOLUTELY PURE and SCIENTIFICALLY MEDICATED.

The Best Soap for the Skin, the Hair, Scalp, &c. Promptly removes odours from handling Chemicals, Wounds, &c. Also a superior Shaving Soap.

RESINOL CHEMICAL COMPANY

SOLE MANUFACTURERS.

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GOLD MEDAL, Cape Town International Exhibition, 1904–5.

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THE ORIGINAL PREPARATION.



Many pharmacists have assured us that even when the name **"HEWLETT'S"** is not appended to the above title they invariably dispense HEWLETT'S preparation, as they know from experience that it is the best, that it keeps indefinitely, and universally gives satisfaction, whilst imitation preparations vary so considerably, not only from the **original** but from each other, that patients notice the difference, and complain.

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NEPENTHE SUPPOSITORIES in four strengths. Equivalent to $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$, and 1 grain Morphia.

The word "NEPENTHE" is registered under the Trade Marks Act, and is the exclusive property of Ferris & Company, Ltd. We have from time to time been compelled to obtain injunctions in the Courts by which Defendants were perpetually restrained from dispensing, selling, or supplying under the name of "NEPENTHE," or any colourable imitation thereof any medical preparation not prepared by us, and from in any manner infringing our Trade Mark "NEPENTHE" (No. 464), and were ordered to pay the costs of the actions.

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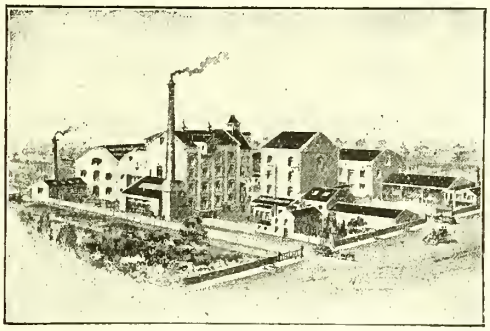
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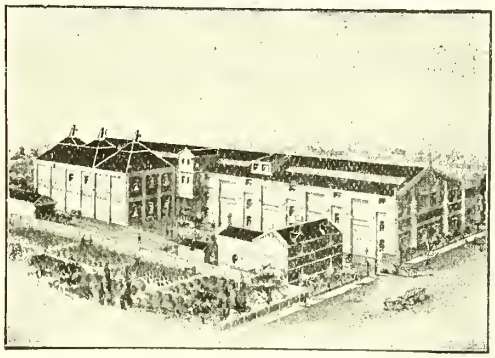
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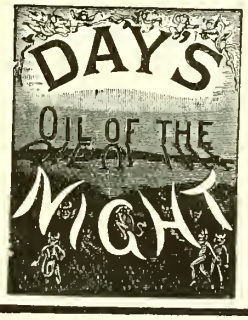
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A Powder-Food that CURES.
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Strengthens the system.
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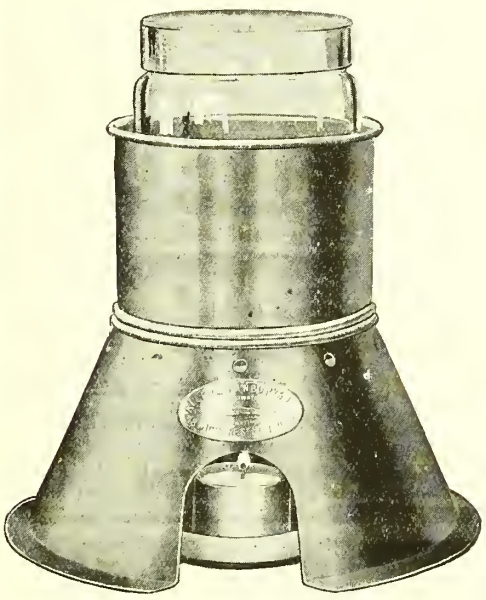
Acetanilid, Chloral-Hydrate, Eserine, Hydroquinone, Pilocarpine, Atropine, Codeine, Guaiacol, Lactophenine, Pyrogallic Acid, Caffeine, Coumarine, Hydrastine, Phenacetin, Resorcine, Santonine, Terpin-Hydrate, Veratrine, etc.

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A culture of vigorous strains of *Bacillus acidi lactici*, prepared in tablet form for internal use and for the production of **"Soured"** or **"Curdled" Milk.**



"SAUERIN" APPARATUS
for the production of
"Soured" or "Curdled" Milk.

THE use of "Soured" or "Curdled" Milk is indicated in auto-intoxications associated with intestinal atony or obstruction, chronic dyspepsia, etc.

It is used especially in colitis, enteritis, and infantile diarrhœa.

The lactic acid in "Soured" Milk stimulates the pancreatic and biliary functions, and a very mild laxative effect is usually observed. "Sauerin" is therefore employed as a cholagogue in hepatic congestion, gall-stone, and as a disinfectant and stimulant to the intestinal tract.

"Sauerin" Tablets.

These are put up in bottles of 50 and 100 tablets.
Retail **2/6** and **4/6** each. Wholesale **24/-** and **42/-** per doz.

The "Sauerin" Apparatus of polished copper, with glass-covered Jar and one dozen Lights:

				Retail	Wholesale
"Sauerin" Apparatus,	1-pint size,	complete		**8/6** each,	**88/-** per doz.
,, ,,	6-pint ,,	,,		**21/-** ,,	**17/6** each.
,, Lights,	1-pint ,,	per box		**10d.** ,,	**8/-** per doz.
,, ,,	6-pint ,,	,,		**3/6** ,,	**35/-** ,,
,, Spare Jars,	1-pint ,,	,,		**1/-** ,,	**10/-** ,,
,, ,,	6-pint ,,	,,		**3/6** ,,	**35/-** ,,

Extracts from the Medical Press, &c.

Intestinal Intoxications. "Metchnikoff has suggested another way of attacking this difficult problem. Instead of attempting to render the bowel aseptic, he advises the introduction of other organisms which are antagonistic to the growth of the putrefactive bacteria. These are the lactic acid producing organisms. 'Soured' milk has long been a staple article of diet among Oriental people, and enjoys a high repute as a hygienic measure. . ."

"Bulgarian 'yahourth,' or 'yoghourt,' is milk soured by the most powerful lactic acid producing bacillus known. Unfortunately, the commercial product in use contains a diplococcus and a strepto-bacillus also. However, preparations of selected lactic ferments are now on the English market; but some of these preparations, tested at St. Bartholomew's Hospital, have been found quite inert. Allen & Hanburys' 'SAUERIN' was the most active preparation of those tested. One or two tablets are taken three or four times daily after meals, which should include some sugary substance, or the tablets may be used to curdle milk, which is taken in that form."—***The Medical Press and Circular,*** July 22, 1908.

Report on "Sauerin" Tablets by an eminent Bacteriologist of one of the chief London Hospitals, June 2, 1909: "The tablets break up easily and show numerous bacilli in film preparations of the powder. They rapidly acidify and clot milk, and give an abundant and pure growth of the Metchnikoff bacillus . . . These tablets I consider to be the most satisfactory which I have yet examined."

Fermented Milk (H.S.F.—50/44). "What you require for this purpose is a pure culture of a vigorous strain of *Bacillus acidi lactici*, which may readily be obtained commercially in various forms, the best being 'SAUERIN' in tablets, which may be obtained from Messrs. Allen & Hanburys Ltd."—***Pharmaceutical Journal,*** January 23, 1909.

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HAY FEVER

Autumnal Catarrh, Rose Fever, and Similar Complaints.

POLLANTIN

(Specific Antidote for Pollen Toxine).
Patented in Germany, England, the United States, &c.
Prepared under supervision of the Discoverer,
Prof. DR. DUNBAR,
BY
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CHEMISTS, DRUGGISTS,
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Possess exceptional facilities for the introduction of NEW SPECIALITIES, Patent Medicines, Druggists' Sundries, Perfumery, &c.



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PRICES.—Beecham's Pills, 13½d. size (56 pills)	9/6
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ADVERTISING MATTER to suit Retailers' requirements will be sent on application.

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Original Packages can generally be supplied at the Current Prices quoted in the Trade Report of this paper on Terms as below.

Acid Diethylbarbituric, 16 oz. @ 38/6 lb.; 1 oz. @ 2/8 oz.
Ammon. Carb, lump, 3 cwt, @ 3⅝d. lb.; 28 lbs. @ 4½d. lb.; 7 lbs. @ 5d. lb.; powder, ½d. lb. extra.
Ammon. Chlor., 99% pulv., 1 cwt. @ 33/- cwt.; 7 lbs. @ 4d. lb.; Batteries, 4/- cwt. extra.
Antim. Crocus Pulv., 1 cwt. @ 35/- cwt.; 14 lbs. @ 4½d. lb.
*Aqua Anetbi Conc. 1-40, 1 lb. @ 2/11 lb.
* „ Anisi Conc. 1-40; 1 lb. @ 3/1 lb.
* „ Cinnam. Conc. 1-40, 1 lb. @ 3/4 lb.
* „ Aurant. Trip., 53 lbs. @ 17/6; 6 lbs. @ 7d. lb.
*Aqua Aurant. Conc., 1–40, 1 lb. @ 6/1 lb.
* „ Rosæ Trip., 53 lbs. @ 17/6; 6 lbs. @ 7d. lb.
* „ Rosæ Conc. 1-40, 1 lb. @ 6/- lb.
* „ Samb. Trip., 53 lbs. @ 23/6; 6 lbs. @ 8d. lb.
* „ Samb. Conc., 1-40, 1 lb. @ 6/1 lb.
* „ Laurocerasi, 53 lbs. @ 17/6; 6 lbs. @ 7d. lb
* „ Menth. Pip. Conc. 1-40, 1 lb. @ 3/- lb.
Argent. Nit., 6's to oz., 25 oz. @ 1/8½ oz.; 1 oz. @ 1/10 oz.
„ „ Cryst., 25 oz. @ 1/6 oz.; 8 oz. @ 1/7 oz.
Bals. Copaibæ pure, 44 lbs. @ 2/2 lb.; 9 lbs. @ 2/4 lb.; 1 lb. @ 2/8 lb.
Bismuth, P.B. Carb., 14 lbs. @ 7/9 lb.; 3 lbs. @ 8/1 lb.; subnit., 1/- lb. less.
Caffeinæ Cit. B.P., 1 lb. @ 10/- lb.
Calamine B.P., 7 lbs. @ 9d. lb.
Camphor, English Flowers, "not artificial," 5 lbs. @ 1/11 lb.; ½ oz. 7 lbs. @ 2/1 lb.; ½ oz. 7 lbs. @ 2/4 lb.. Crude, 140 lbs. @ 1/4½d. lb.; 28 lbs. at 1/6 lb.
Carbo Animalis or Ligni, powder or lmmp, 1 cwt. @ 14/- cwt; 28 lbs. @ 2d. lb.
Ess. Limonis (oil) original coppers, 12 lbs. @ 3/6 lb.; 6 1-lb. bots. @ 4/- lb., not guaranteed absolutely pure.
*Ess. Pear (artificial), Jargonelle, 5 lbs. @ 1/6 lb.; Bergamot, 2/6 lb.
*Ess. Pineapple, 5 lbs. @ 3/4 lb.
* „ Vanilla Beans, 5 lbs. @ 4/4 lb.; 1 lb. @ 4/7 lb.
*Ext. Belladonnæ Liq. B.P., 5 lbs. @ 4/7 lb.; 1 lb. @ 5/- lb.
Ext. Cascara Sag. Liq., B.P., 10 lbs. @ 1/2 lb.
*Ext. Ergot. Liq. P.B., 5 lbs. @ 3/1 lb.; 1 lb. @ 3/4 lb.
* „ Glycyrrh. Liq. B.P., 6 lbs. @ 1/6 lb.
* „ Hamamelis, Liq. P.B., 5 lbs. @ 3/5 lb.
Ext. Hyoscyam., Solid, B.P., 3 lbs. @ 6/- lb.; 1 lb. @ 6/9 lb.
*Ext. Ipecac. Liq. P.B., 5 lbs. @ 11/- lb.; 1 lb. @ 11/9 lb.
***Ext. Nucis Vom. Liq. B.P.,** 5 lbs. @ 3/3 lb.; 1 lb. @ 3/6 lb.
„ Quassiæ, Solid, 7 lbs. @ 6/- lb.: 1 lb. @ 6/4 lb.
Ext. Sarsæ Co. Solid; 7 lbs. @ 4/- lb.; 1 lb. @ 4/6 lb.
Ferri Ammon. Cit., B.P., 28 lbs. @ 1/4¾ lb.: 7 lbs. @ 1/7 lb.
Ferri Carb., 1 cwt. @ 21/- cwt.; 28 lbs. @ 3d. lb.
Ferri et Quininæ Cit., P.B.; 500 ozs. @ 3d. oz.; 100 ozs. @ 3¼d. oz.; 25 ozs. @ 3½d. oz.
Flor. Anth. Exot., 1 cwt. @ 48/-; 7 lbs. @ 6½d. lb.
Fol. Hyoscyam. Bien., 7 lbs. @ 6/- lb.; pulv., 5/- lb.
Fol. Sennæ, Alex. Parv., 1 cwt. @ 4d. lb.; 28 lbs. @ 4½d. lb.
*Liq. Ammon. Aromat., 6 lbs. @ 9d. lb.
* „ Antim. Chlor. Pure, 8 lbs. @ 6½d. lb.
* „ Arsenicalis, B.P., 7 lbs. @ 4d. lb.; 1 lb. @ 7d. lb.
* „ Arsenii Hydrochlor., P.B., 7 lbs. @ 4d. lb.; 1 lb. @ 7d. lb.
* „ Bismutb. P.B., 6 lbs. @ 10½d. lb.
* „ Copaiba Bucba et Cubeb, 5 lbs. @ 2/6 lb.; 1 lb. @ 2/10 lb.
* „ Easton., p.s. 1-3, B.P., 1 lb. @ 3/- lb.
* „ Ferri Dialysatus, 6 lbs. @ 7d. lb.
* „ Ferri Iod. p.s. 1-7, 1 lb. @ 5/9 lb.
* „ Ferri Perchlor. Fort. P.B., 7 lbs. @ 4d. lb.
* „ Ferri Phosph. Co. p.s. 1-7, 7 lbs. @ 1/6.
* „ Hypophosph. Co. p.s. B.P.C., 1 lb. @ 3/4 lb
* „ Iodi Fort. B.P., 5 lbs. @ 4/9 lb.
Manna, fine flake, 14 lbs. @ 2/8 lb.; 7 lbs. @ 2/10; 1 lb. @ 3/4 lb.
Morphinæ Acet. Hydrochlor. or Salph., Pulv., B.P., 25 oz. @ 5/11 oz.; 16 oz. @ 6/- oz.; 8 oz. @ 6/2 oz.; 1 oz. @ 6/6 oz.
Ol. Citronelle, 9 lbs. @ 1/4 lb.
Ol. Morrhuæ, 1909, finest non-freezing Norwegian 25 gall. tin lined barrels @ 69/- per barrel; 2 gal. tins @ 7/6 each.
Ol. Olivæ, B.P., good Yellow, 45 gall. Barrell @ 4/3 gall.; 2 galls. @ 5/3 gall.
Opium B.P. Turc., 3 lbs. @ 13/6 lb.; 1 lb. @ 14/6 lb; powder, 6d. lb. extra.
Quininæ Sulph., B.P., 400 oz. @ 6½d. oz.; 100 oz. @ 6¾d. oz.; 25 oz. @ 7d. oz.; 10 oz. @ 8d. oz.
Scammouy Resin Pulv. B.P., 7 lbs. @ 4/6 lb.; 1 lb. @ 4/11 lb.
Santonine, B.P., 7 lbs. @ 13/- lb.; 1 lb. @ 14/-.

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Every care and attention given to INDENTS.

Carmine, Finest, 1 lb. @ 17/- lb.; No. 2, 1 lb. @ 13/- lb.
Cera Alba, B.P., White Moons, 1 cwt. @ 1/6½ lb.; 28 lbs. @ 1/7½ lb.; 4 lbs. @ 1/8 lb. Flav. 1 lb. Blocks, 28 lbs. @ 1/6½ lb.; 4 lbs. @ 1/7½ lb.; 1 oz., ½ oz. Tahs., 7 lbs. @ 1/7½ lb.
Cetaceum: No. 1, fine white, 64 lbs. @ 1/4 lb.; 7 lbs. @ 1/6 lb.; powder, 7 lbs. @ 1/10 lb.
Chloral Hydras Cryst. B.P., 7 lbs. @ 4/5 lb.; 1 lb. @ 4/9 lb.
*Chlorodyne, 5 lbs. @ 1/11 lb.
***Chloroform,** pure B.P., 12 8-lbs. @ 1/7½ lb.; 8 lbs. @ 1/8½ lb.; 6 1-lb. botts. @ 1/10½ lb.
Chloropbyll, 7 lbs. @ 5/- lb.; 1 lb. @ 5/9 lb.
Cocainæ Hydrochlor. P.B., 25 ozs. @ oz.; 4 ozs. @ 7/10 oz.; 1 oz. @ 8/- oz.
Codeina, 1 oz. @ 10/4 oz.; Phospb., 1 oz. @ 8/8 oz.; Hydrochlor. or Sulph. 1 oz. @ 9/6 oz.
Colocynth, Apple, English ground, 1 cwt. @ 10½d. lb.; 28 lbs. @ 11d. lb.; 7 lbs. @ 1/0½d. lb.
Composition Powder (Coffin's), 1 cwt. @ 58/- cwt.; 7 lbs. @ 7½d. lb.
Conf. Sennæ P.B., 14 lbs. @ 8d. lb.; 7 lbs. @ 8½d. lb.
Cream Tartar, 98% powder, 1 owt. @ 72/6 owt.; 7 lbs. @ 9d. lb.
Creosotum Beechwood, P.B., 22 lbs. @ 1/7 lb.; *7 lbs. @ 1/9 lb.
Creta c. Camph., 7 lb. @ 8d. lb.
„ Gall. Pulv., in sacks, 10 cwt. @ 6/- cwt.; 1 owt. @ 7/- cwt.; 14 lbs. @ 1½d. lb.
*Dec. Aloes Co. Conc. 1–2, 6 lbs. @ 2/4 lb. Sine croco, 6 lbs. @ 1/2 lb.
*Dec. Cinchonæ (Rubræ) Conc. 1-7, 6 lbs. @ 1/10 lb.
*Dec. Senegæ Conc., 6 lbs. @ 2/1 lb.
Emulsio Ol. Morrhuæ, 10 lbs. @ 6½d. lb.
Eserine Sulph. in 15 grain tubes, 3/- eacb.
Ess. Bergam. (Oil), 12 lbs. @ 14/- lb.; 1 lb. @ 15/6 lb., not guaranteed absolutely pure.
Fol. Sennæ Tinnev. 3½ cwt. @ 2½d. lb.; 1 cwt. @ 3½d. lb.; 7 lbs. @ 3½d. lb.; Englisb Ground, 1 cwt. @ 5¾d. lb.; 56 lb. @ 6d. lb.; 7 lbs. @ 7d. lb.
Formaldehyde, 40%, 132-lb. Carboys @ 52/- each; 7 lbs. @ 7½d. lb.
Gallæ Caerul. Pulv., 7 lbs. @ 1/- lb.
Gingerine, Extra, 5 lbs. @ 9/6 lb.; 1 lb. @ 10/- lb.
*Glycerin. Acid. Boric P.B., 6 lbs. @ 1/2 lo.
*Glycerin. Acid. Carbolic P.B., 6 lbs. @ 1/2 lb.
* „ Acid. Tanuic, P.B., 6 lbs. @ 1/2 lb.
* „ Belladon. B.P.C., 6 lbs. @ 2/6; 1 lb. @ 2/9 lb.
* „ Boracis P.B., 6 lbs. @ 11d. lb.
Glycerin. Pepsine Acid P.B., 1 lb. @ 3s. lb.
*Glycerine Plumbi, suhacet., P.B., 6 lbs. @ 1/4 lb.
Guaiacol Carb., 7 lbs. @ 5/- lb.; 1 lb. @ 5/4 lb.
Guaiacol, pure, 1 lb. @ 3/6 lb.
Gum Acaciæ sorts, 3 cwt. @ 38/- cwt.; 1 cwt. @ 45/- cwt.; 7 lbs. @ 5½d. lb.; English Ground Powder, No. 1, 1 cwt. @ 95/- cwt.; 7 lbs. @ 1/- lb.; No. 2, 1 cwt. @ 60/- cwt.; 7 lbs. @ 8d. lb. [@ 1/6 lb.
Gum Benzoin, Sumatra, 84 lbs. @ 1/4 lb.; 7 lbs.
Gum Catechu, Nig. English Ground, 1 cwt. @ 50/- cwt.; 14 lbs. @ 6d. lb.
Gum Guaiaci, 1 cwt. @ 10½d. lb.; 28 lbs. @ 1/- lb.
Gum Juniper, 14 lbs. @ 9d. lb.
Gum Tragac. Elect., English Ground, 7 lbs. @ 3/6 lb.; 1 lb. @ 3/9 lb.
Honey, fine White Set, 28 lbs. @ 47/- cwt.
Hydrokinone, 7 lbs. @ 3/4 lb.; 1 lb. @ 3/7 lb.
Lin. Camph. P.B., 40 lbs. @ 10½d. lb.; 9 lbs. @ 11½d. lb.
Lin. Sapo Meth., 9 lbs. @ 7d. lb.
Lin. Tereb. Acet., B.P., 9 lbs. @ 1/- lb.
Linseed o. Oil, Crushed, 3 owt. @ 16/- owt.; 1 cwt. @ 16/6 cwt.
*Liq. Ammonii Acetatis Conc. 1-7, 6 lbs. @ 10½d. lb.; 1 lb. @ 1/0½ lb.
Shellac (Orange), 1½ owt. @ 74/- cwt.; 7 lbs. @ 10d. lb.
Soda Cit., B.P., 3 lbs. @ 1/10 lb.
Soda Caustica, 28-lb. tin @ 8½d. lb.; 6 1-lb. Bots. @ 10d. lb.
Soda Salicyl. Pulv., 1 cwt. @ 1/5 lb.; 28 lbs. @ 1/6 lb.; 7 lbs. @ 1/7 lb.; phys. pur., 28 lbs. @ 2/2 lb.; 1 lb. @ 2/5 lb.
Soda Sulphite Recryst., 1 cwt. @ 1s/6 cwt.; 7 lbs. @ 2½d. lb
Soda Sulphocarbolas B.P., 7 lbs. @ 10½d. lb.; 1 lb. @ 1/1 lb.
*Spt. Æther Nit. P.B., 4½ lbs. @ 3/6 lb.; 1 lb. @ 3/9 lb.
*Sp. Ammon. Aromat. P.B., 5 lbs. @ 2/8½ lb.
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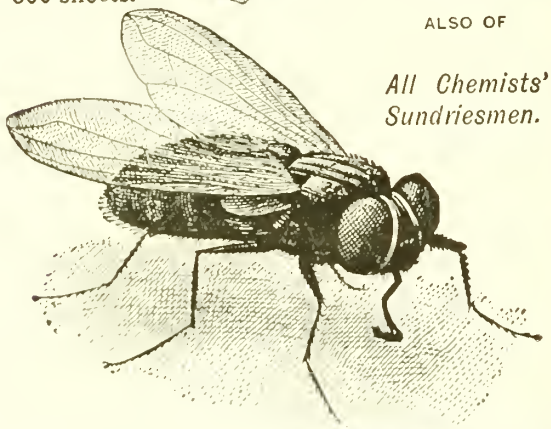


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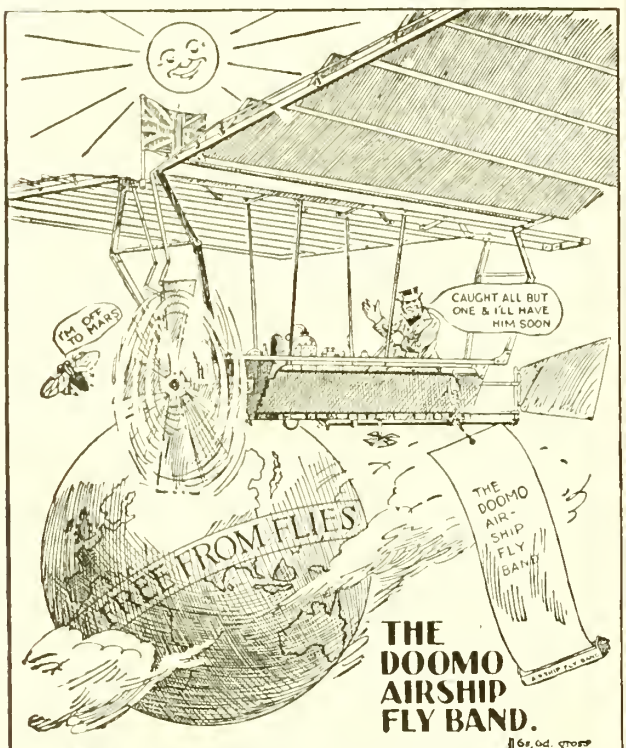
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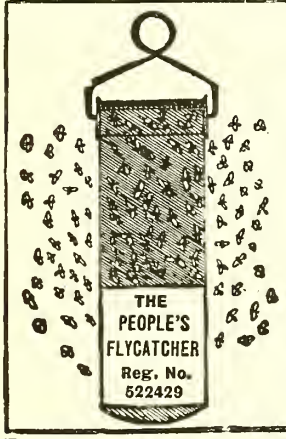
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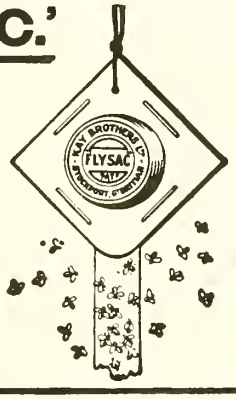
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SOLE MAKERS:

KAY BROS. Ltd., STOCKPORT.

30 years' experience in the manufacture of Bird-limes and Flygums.



THE

"SILVER"

LIXOL

FLY CATCHERS.

(Patent and Registered).

The Latest and Best.

Send for Samples.

They Will Convince You.

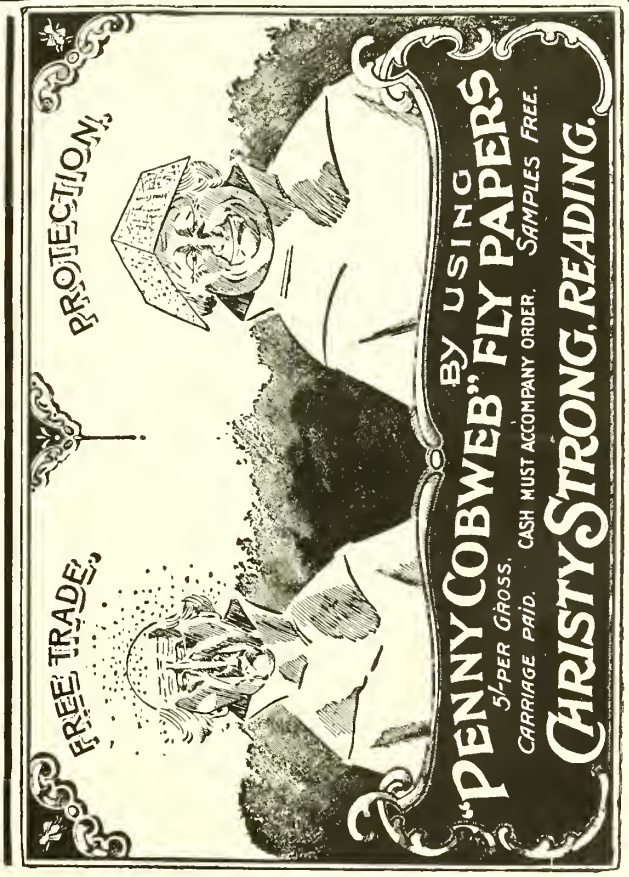
A Neat and Handy Contrivance.

Easy to Open.

Pull the String, That's All!

Order through your Wholesaler—if he doesn't stock, send us a postcard and we will arrange.

Sole Makers: **DEANSMERE MANUFACTURING CO.,**
Works: **HIGH STREET, STOCKPORT,** England.





THE NATURAL MINERAL WATERS OF

VICHY

(STATE SPRINGS)

CÉLESTINS For Diseases of the Kidneys, Gravel, Gout, Rheumatism, Diabetes, &c.

GRANDE-GRILLE For Diseases of the Liver and Biliary Organs, &c.

HOPITAL For Stomach Complaints, Indigestion, &c.

VICHY-ÉTAT PASTILLES Two or three Pastilles after each meal facilitate digestion.

VICHY-ÉTAT COMPRIMÉS For instantaneously producing an effervescing alkaline water.

Price Lists, Show Cards, Dummy Bottles, Pamphlets, &c.

CAUTION.—Each Bottle from the STATE SPRINGS bears a neck lable with the word "VICHY-ÉTAT" and the name of the SOLE AGENTS:—

INGRAM & ROYLE, LTD., 26 UPPER THAMES STREET, E.C. And at LIVERPOOL and BRISTOL.

The Gold Medal Wine Tonic



London. 1908.

WINCARNIS

DO YOU Stock it? It means quick sales and a steady profit if **YOU DO**

SEND FOR LIST.

All Registered Chemists can sell Wincarnis with Quinine without a licence. Why not you?

Medical men in your district order it often, and there is a large public demand. [18]

By Special Appointment to the King & Queen of Spain.

COLEMAN & CO., LTD., 21 Wincarnis Works, NORWICH.

BELOW

ARE JUST A FEW OF HORNER'S

SPECIALITIES, for which they are renowned all over the world . .

Vittoria Liquorice Juice.

High-class Trimmed and Powdered Rhubarb.

Genuine Otto of Roses.

Absolutely Pure English-distilled Sandal-wood Oil.

Best Selected Druggists' Opium.

Cut Sarsaparilla of all kinds.

Powdered Ipecac. and Jalap.

A large stock of all Gums, Roots, Barks, &c., in ordinary form and powder, always kept.

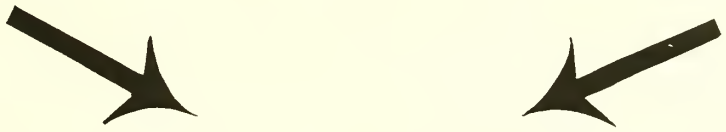
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24 GEORGE STREET, TOWER HILL, E.C.

(Late of Mitre Square, Aldgate)

And 20 BUCKLERSBURY.

Philanthropy



—telling your customers about

"Prana" Sparklets

in hot weather.

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PURE ORANGE WINE

VINUM AURANTII, B.P.), prepared in strict accordance with the Formula of the British Pharmacopœia. (Wholesale only.)

WRITE FOR SAMPLES TO 10, 11, and 12 THOMAS STREET, DUBLIN.

Established 1855. **ROBINSON'S ORIGINAL** Excise Drawback on Export Orders.

CONCENTRATED WATERS.

STANDARDISED TO B.P. 1898.

When diluted in the proportion of one part to forty parts of water at 60° temperature, they faithfully represent the Medicated Waters of the British Pharmacopœia. They are always of uniform strength, and will keep good any length of time in any climate.

Aqua Amygd. Amar. Conc. (U.S.) 4/- per lb.	Aqua Cassiæ Conc. ... ... 4/- per lb.	Aqua Menth. Virid. Conc. ... 4/- per lb.
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The above may be had in ¼-lb., ½-lb., or 1-lb. Bottles and upwards, through most of the Wholesale Drug Houses.

Each Bottle has the Inventor's Protection Label over the cork, without which none are genuine.

SUPERIOR ORANGE WINE (Vin. Aurantii, B.P. 1898).

Samples of any of the above sent free on application from

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No Stropping. No Honing.

Known the world over.

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Gillette Safety Razor, Ltd.
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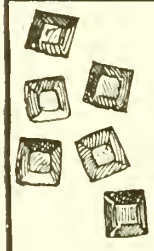
"SOLAZZI" LIQUORICE JUICE

THE CHEMISTS' BRAND.

'The Lancet' says: 'Of Standard Purity'

Recommended also by '*The British Medical Journal*,' '*Health*,' '*The Chemist and Druggist*,' '*Food and Sanitation*.'

ASK FOR SHOWCARDS AND HANDBILLS. To be obtained of all Wholesale Houses.

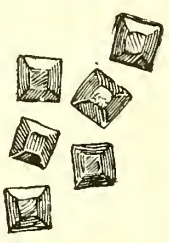


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CUSHION SHAPED.

THE ORIGINAL AND THE BEST.

3s. 6d. per lb. Also in Tins at 2- and 4- doz.

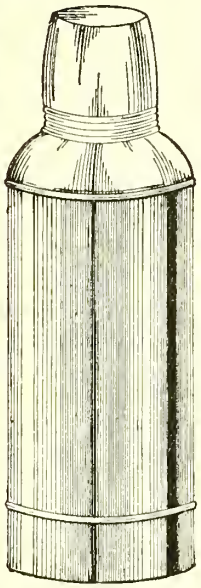


E. ERNEST JACKSON,

Telegrams: "Jackson Crediton."

Crediton, Devon, & 291 Kingsland Road, London, N.E.

THE THERMOS FLASK—for Lactonised Milk.



THERMOS Flask not only keeps liquids steaming hot for 24 hours and cold liquids icy cold for days without fire or chemicals, but by testing and experiments by able Medical Men it has been proved to be the **easiest, simplest,** and **most effective** mode of producing Lactonised Milk. The *modus operandi* is as follows :—

Heat your milk to a temperature from 105° to 110°— Pour into **THERMOS Flask** with one tablet of Lactic Acid and a spoonful of sugar. Allow the milk to stand from 10 to 12 or more hours, and perfect Lactonised Milk is the result.

This means MINIMUM trouble–MAXIMUM results

MEDICAL MEN ARE LARGELY RECOMMENDING THE FLASKS TO PATIENTS.

Prices from 21/- each PINTS and 31/6 each QUARTS.

They can be obtained of all CHEMISTS and DRUGGISTS. JEWELLERS, SILVERSMITHS and STORES.

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PACKED DRUGS & MEDICINES.

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MENLEY & JAMES, Ltd.

Menley House, 39 Farringdon Road, London, E.C.

are now introducing to the Medical Profession

GLIDINE = =	(A pure Vegetable Protein Food).	Retailing at **2/9** and **5/-** per tin.
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Price List will be sent on application.

LINES TO STOCK NOW!

OVALTINE, FORMITROL PASTILLES

THE NEW COMPLETE FOOD (On the P.A.T.A.). (In Tubes or in Bulk).

"ONE DAY" COLD CURE; AMMONIATED QUININE TABLETS, MENTHOL and COCAINE DRAGEES, &c.

Customer's Name and Address Printed on any Quantity. Send for full List of Specialties.

A. WANDER, Ph.D., Manufacturing Chemist, **1 & 3 Leonard St., City Road, E.C.**

LOFTHOUSE & SALTMER, *Wholesale and Export Drug Merchants, Manufacturing Chemists,* HULL,

Offer the Trade the following valuable P.A.T.A. Protected lines, bearing a very large Protected Retail Profit, which sell freely and are well known and valued by the Public in many parts of the Country.

	Protected Retail Price.	Dozen.
LOSALL'S SALT (well advertised), tins ...	6d. ...	3/6 net.
" " " " ...	1/- ...	7/- "
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Chemists taking up the above really valuable, large profit-yielding lines, will find them an important adjunct to their business,

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The 1909 line; before 1909 impossible to produce. A combination—in tablet form—of the finest Colonial Beef Extract and Garden Vegetables, nothing else. Sells as a twin tablet for one penny—sufficient for two cups. Try it yourself and note result. You can sell this line on your reputation, and add to it! Try a sample parcel. You will find your customers returning for more.

The Gold Medal Consommé TABLET.

Turn over your stock, and find the article that shows you a better profit, then give the two lines an equal advantage, and again note results. We can supply it to you at 8*s*. per gross cubes; it shows 33⅓% profit, but if you send in your opening order now, we will add 25% to it in goods. Order 5 gross; if you pay for four, we will pay for one. Put up in 6's, 12's, 72's and 144's. On P.A.T.A.

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FRAME-FOOD

PREPARATIONS.

(Frame-Food, Racia Food (F.F. No. 1), Frame-Food Jelly and Cocoa.)

TRADE PRICE LOWERED IN MAIN LINES

FRAME-FOOD and FRAME-FOOD COCOA, the Retail Prices remaining the same.

New Lines: "FAMILY" TINS.

NO STOCK! NO RISK! GOOD PROFIT!

Best Terms allowed on £2 Orders which are C.P.

ADVERTISING MATTER FREE.

Write for Particulars—

FRAME-FOOD CO., LTD.

SOUTHFIELDS, LONDON, S.W.

PRICES PROTECTED.

Dr. Allinson's Food Preparations.

Food for Babies, Prepared Barley, Brunak, Power, Cocoa, Biscuits, Soup, Walnut Butter, Wholemeal, &c.

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We issue a list of WHOLESALE HOUSES who keep above in stock; if for *any* reason you have difficulty in obtaining supplies, please send post-card direct to us, and a list will be sent to you by return. See trade mark on all our goods: T. R. ALLINSON. ***None Genuine Without.***

NATURAL FOOD COMPANY, LIMITED.
305 Cambridge Road, Bethnal Green, LONDON, E.

Handbills, Booklets, Showcards, &c., Free.

N.B.—Our goods are to be sold only at prices stated upon the Price Lists we issue to the trade.

SAL HEPATICA.

PUT UP FOR EXPORT:

Small	size,	3	oz. bottle,	in case.
Medium	,,	7	,, ,,	,,
Large	,,	16	,, ,,	,,

OBTAINABLE IN LONDON FROM

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W. EDWARDS & SON,

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WHOLESALE AND EXPORT DEALERS IN

Proprietary Medicines & Druggists' Sundries

English, American, French, &c.

SOLE AGENTS FOR ROCHE'S HERBAL EMBROCATION,

Burchell's Anodyne Necklaces; Ford's Balsam of Horehound; Bertelli's Catramin Pills, &c.; Bovinine, a perfect Invalids' Food; Pacita, remedy for Horses, Dogs, &c.; Balm of Bethesda; C. & A. Oldridge's Balm of Columbia; Gombault's Veterinary Preparations; the Olcusaban Eucalyptus Disinfectants; Clark's Neuralgic Tincture; Ibeson's Foot Rot Ointment; Woolley's Candy; Digena Tea; Nolene Preparations; Seymour, Hamilton & Co.'s Preparations.

Special Agents for the Concentrated Liquors and other preparations of Messrs. Fletcher & Fletcher.

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Agencies undertaken on advantageous terms for Proprietary Articles and other goods.
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WHOLESALE DRUGGISTS,
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Telephone: "3593 CENTRAL."

GELATINE-COATED DOG & FOWL PILLS. *Samples Free.*



SOLE MAKERS OF
GABRIEL & TROKE'S
GELATINE CAPSULED
HORSE BALLS
Alterative, Condition, Cordial, Cough, Diuretic, Fever, Physic, Worm, Quinine, Tonic Balls (Registered 81,291).

Sole Makers of 'SANOGEN VAPORISER' (Reg. No. 21,772), for WHOOPING COUGH, ASTHMA, &c. Retail Price 2/6 (subj. to dis.)

SAVARESSE'S CAPSULES



(MADE OF ANIMAL MEMBRANE).

The only Capsule not made of Gelatine.

The envelope of organic membrane insures absorption by the intestine instead of by the stomach, thus avoiding the usual nausea and "repeating."

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LONDON AND LIVERPOOL. H

KUTNOW'S POWDER

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Prescribed for and used by the British Royal Family.

COMMANDS THE LARGEST SALE

Endorsed and prescribed by the leading Physicians for use in Constipation, Rheumatism, Gout, and all disorders of the Liver, Stomach, Kidneys, and Bowels.

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Kutnow's Powder is advertised throughout Great Britain, India, Australia, and all parts of the Globe. It enhances the reputation of every Chemist for high-class preparations.

STOCKED BY ALL MEDICINE HOUSES

Millions of bottles of Kutnow's Powder are sold annually. It supplies a public want and consequently the sales increase every year.

ALL CHEMISTS SHOULD KEEP IT

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S. KUTNOW & CO., LTD., 41 FARRINGDON RD., LONDON, E.C.

To Chemists & others Interested in Dentistry

We have had

25 YEARS' EXPERIENCE

in progressive Dentistry.

We can supply everything the tyro in

DENTISTRY REQUIRES

from a tooth to a complete Surgery or Workshop Outfit.
And our

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is always at your service on any subject connected with Dentistry. If you are thinking of adding Dental work to your present business

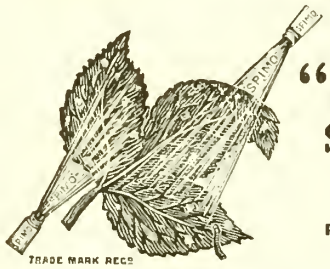
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No matter where you are situated, we can do business with you, and do it to your satisfaction, intelligently and with careful attention to detail.
Drop us a postcard mentioning the *C. & D.*

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The Aphis **INVASION.** GARDEN LOVERS CAN EASILY & CHEAPLY SECURE **PROTECTION**

BY USING **"ABOL"** WHITE'S SUPERIOR **INSECTICIDE,** The Best Plant Wash for garden and greenhouse.



AND

"ABOL" Syringe.

THE PERFECT SPRAYER.

PRICES: 8/6, 10/6, 14/6
By post 4*d.* extra.

KILLS APHIS, MILDEW, CATERPILLARS, &c.

MAKES PLANTS HEALTHY. INVALUABLE TO ROSE GROWERS.

NON-POISONOUS.

½-Pints, 1/-; Pints, 1/6; Qts., 2/6; ½-Galls., 4/-; Galls., 7/6.

Unsolicited opinions: "Grand success." "Finest on the market." "A perfect syringe." "More than satisfied." "Delighted." And 100's of others.



May be had through all Seedsmen, Florists, Chemists and Ironmongers. Full particulars post free from the Sole Proprietors and Manufacturers—

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ABSORBINE (YOUNG'S)

Removes Bursal Enlargements, Thickened, Swollen Tissues, Curbs, Filled Tendons, Soreness from any Bruise or Strain. Cures Spavin Lameness. Allays Pain. Does not Blister, remove the hair, or lay the horse up. **8/3** per bottle, delivered. **Book 1D free.**

ABSORBINE, Jr., for human use, **4/6** per bottle. For Synovitis, Strains, Gouty or Rheumatic Deposits, Varicose Veins, Varicocele, Hydrocele. Allays pain. Book free. Genuine in Lithographed Tin Cans.

Manufactured only by
W. F. YOUNG, P.D.F., Springfield, Mass., U.S.A.

Advertisements like the above are appearing in all the important farm and stock papers throughout the United Kingdom. Many chemists carry the goods in stock. This is bound to create a constant and ever-increasing demand for the remedy. Inquiries from your section referred to you. If you have not already advised us that you carry ABSORBINE in stock, do so immediately, so that your name will surely appear on our reference list.

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JOHN STRANGE WINTER'S



"Since using the Hair Food I have grown into a Persian."

TOILET PREPARATIONS.

They interest and please all customers, and earry high profits.

Five Gold Medals.

Write to-day (quoting this advt.) for New Priee List and Speeial Offer to—

"JOHN STRANGE WINTER,"
York House,
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Telephone: 742 Putney.

THE "EMPIRE" CLINICAL THERMOMETERS.

Guaranteed Best London Make from Well-seasoned Tubes.

PRICES.

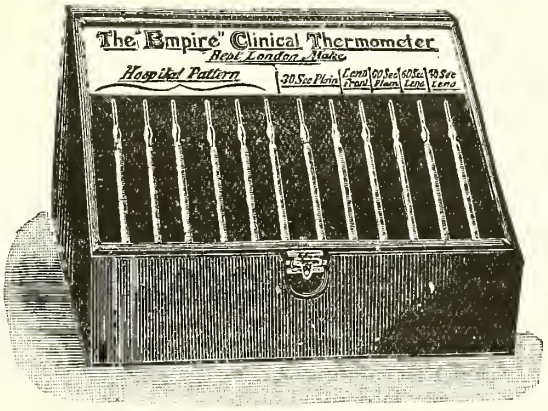
"Hospital" Pattern, in metal case, per doz. **9 0**

"Hospital" Pattern, in 3 dozen lots, per doz. **8 6**

"Hospital" Pattern, in 6 dozen lots, per doz. **8 0**

"Hospital" Pattern, lens front, per doz. **13 0**

Certificate of accuracy for any Thermometer ... per doz **5 0**



PRICES.

60 second, plain, per doz. **12 0**

" lens front, per doz. **16 0**

30 second, plain, per doz. **13 6**

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Certificate of accuracy verified by Kew Observatory, per doz. **15 0**

Each Thermometer is packed in a specially designed card box with descriptive label on lid. We accept all risk from breakage in transit if advised by return of post.

☛ ***A Glass-topped Showcase, as above illustration, GIVEN FREE with orders for 3 dozen Thermometers***

N.B.—5 per cent. discount allowed for prompt cash off above and all List prices. Carriage paid on orders of £2 and upwards to any town in the United Kingdom.

We are the right House for Anti-Rheumatic Rings, Belts, Catheters, Enemas, Elastic Hosiery, Hot Water Bottles, Injection Syringes, Pessaries, Sponge Bags, Trusses, Water Beds, Water and Air Cushions, Waterproof Sheeting, and every description of India Rubber Goods.

OUR GOODS ARE RIGHT AND PRICES LOW.

Write for New Illustrated Price List, post free.

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DISPENSING BOTTLES & PHIALS.

I. ISAACS & CO., Glass Bottle Manufacturers,
106 Midland Road, St. Pancras, London, N.W.

Beg to call attention to their REDUCED PRICES.
We make the New Shape, Oval Fronted Bottles. No extra charge.

FIRST QUALITY.

3 & 4	6 & 8	12	16 ounce.	
9/-	10/-	15/-	20/- per gross	Round edges, plain or graduated, quinine tinted.

SECOND QUALITY.

3 & 4	6 & 8	12	16 ounce.	
7/6	8/6	12/-	18/- per gross	Round edges, plain or graduated, clear blue tinted.

PANEL BOTTLES (reduced prices).

2	3	4	6	8 ounce
7/6	8/-	8/-	9/-	10/- per gross.

WHITE PHIALS—GOOD QUALITY.

½	1	1½	2 ounce	
3/6	4/-	4/6	5/6 per gross	Plain or teaspoons.

Six gross and upwards, assorted or otherwise, sent carriage paid to any address in the United Kingdom. Smaller quantities not carriage paid.

Established 50 years. Bankers: London and Westminster Bank

CORNS **CORNS**

ROSALINE

THE CELEBRATED CURE FOR

SOFT and HARD CORNS

7½d. and **1/-** per bottle.

Prepared only by

S. EDWARDS, PHARMACIST, **GODALMING.**

BEST TRADE TERMS.

Lilywhite Photo Papers and Postcards.

All amateurs have heard of this brand and you may calculate splendid trade in this line with good discounts. Apply for terms of Agency for your district.

LILYWHITE WORKS, HALIFAX.

Tels.: 1041 & 1041a.

FEET! FEET!! FEET!!!

PEDEZY

(Registered.)
Gives Foot Ease.

A NEW FOOT TONIC. The **ONE AND ONLY** specific for
TENDER—TIRED—FŒTID FEET.
A deodorant liquid giving immediate results. A new and **ORIGINAL** preparation that sells at sight.

Retail Price 1/- per bottle. Liberal Terms. No Cutting. Agents Wanted.

KNIGHT & Co., *Pharmaceutical Chemists,* **20 Wheeler Gate, Nottingham.**

Telephone Number: 3365 (3 lines), London Wall.

H. POTHS & CO.,

26 & 27 FARRINGDON STREET, LONDON, E.C.

SHOP BOTTLES AND JARS WITH VITRIFIED LABELS, SHOW BOTTLES,

Perfume, Screw-capped, and Medical Bottles of all kinds.
Graduated Measures, Druggists' Sundries.

Illustrated Catalogues free.



DO NOT REFUSE ORDERS, BUT WRITE,

and instructions for taking Measures and Prices of the best Surgical Appliances for the following cases will be forwarded per return.



J. H. HAYWOOD, LIM.

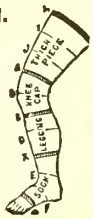
Surgical and Athletic Appliance Manufacturer,

CASTLE GATE, NOTTINGHAM.

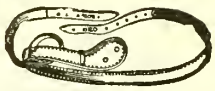
Specialities: TRUSSES for Ruptures of all kinds.

Special Quality for Colliers, Engine Drivers, &c. Ladies' and Gentlemen's Supporting Belts and Bandages. Poro-Plastic Jackets and Steel Instruments for Curvature of the Spine moulded to the Patients as in London. Splints and Instruments for Deformed Feet and Legs. Chest Expanding Braces for Stooping Shoulders and Contracted Chests. Patent Elastic Surgical Stockings, without Seams, for Varicose Veins, Sprains &c. Magnetic Belts and Appliances for all parts of the body. India Rubber Appliances, Invalid Furniture, Bath Chairs, Carriages, Crutches, Ear Trumpets, Throat, Ear and Nose Instruments, &c. Artificial Arms, Legs, &c. Strong Cheap Articles for Working Men. Appliances scientifically made and carefully fitted at the Manufactory.









Invalids waited upon at their own Residence (by Lady Attendant) if wished.

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Have for upwards of a quarter of a century made a special study in the interests of **Chemists and Drug Stores** as regards their

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Requirements, and have received **oral and written praise** from many hundreds of their clients from all parts of the British Empire. **Medical Printing** can only be supplied in a satisfactory manner by those who make it a "**specialty.**"

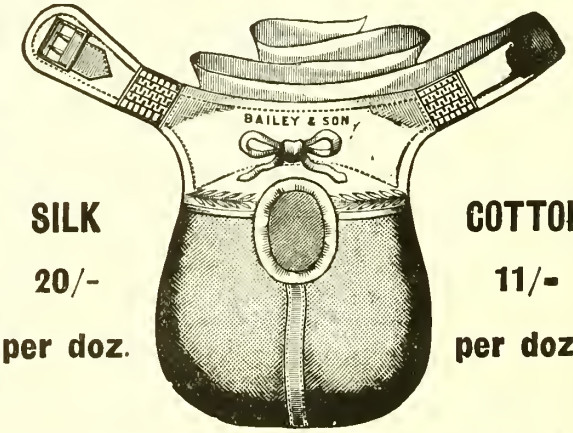
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Medical Printers,

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Smart, attractive, catchy Printing of every description. Set of Samples, 6d. For Colonies, 10/6, which is credited to £5 orders.

BAILEY'S "A.B.C." SUSPENSORIES.



SILK
20/-
per doz.

COTTON
11/-
per doz.

Assorted—A, small; B, medium; C, large bags.

W. H. BAILEY & SON,

38 OXFORD STREET, LONDON. W. [3]



WE STOCK FOR YOU at our warehouse in Bermondsey.

These are a few of the things we stock.



OPAL Mexicans, Panels and Pomades now ready.

Lozenge and Cachou Jars, Perfume Bottles, Cannons, Kalis, Glycerines, Lemon Crystals, Limes, Medicals, Ovals, Panels, Flats, Pomades, Tobins, Vials, Eau de Cologne, Eau de Quinine, &c., &c.





MALT JARS. You had better make your enquires now for machine made double-cap jars. Do you want square or round?



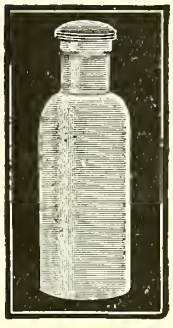


Jules Lang & Son,

16 Bury Street, St. Mary Axe,

Dept. B. *LONDON, E.C.*

Nat. Telephone: Avenue (2 lines) 1675.
Tel. Add.: "ASSORTED LONDON."
Code in use: A B C, 5th Edition.







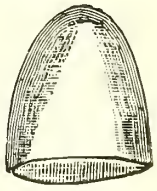






RENDELL'S

SOLUBLE QUININE PESSARIES.



THE WORLD-WIDE REPUTATION that these Pessaries have obtained since their invention by **W. J. Rendell** in 1885 has induced unscrupulous persons to place upon the market worthless and injurious compounds, with colourable imitations of W. J. Rendell's labels. To distinguish the genuine Pessaries from these fraudulent concoctions, see that the Registered Trade Mark and Number, in ***RED INK***, are upon each box thus:

Registered Trade Mark, without which none are genuine. No. 182,688.

W. J. Rendell No. 182,688

Registered also in Australia, India, The Cape, The Argentine, Germany, &c.

IMPORTANT NOTICE AND CAUTION.

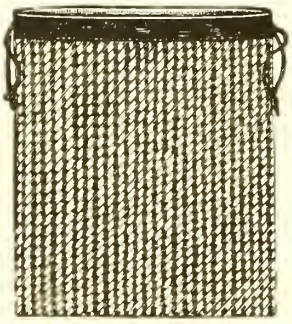
Several injunctions in the High Court of Justice having already been obtained (reports of which have appeared in "THE CHEMIST AND DRUGGIST"), W. J. RENDELL'S SOLICITORS are instructed to take proceedings against all persons (Makers or Vendors) fraudulently using the name of "W. J. RENDELL," "RENDELL," or any colourable imitation thereof in connection with Pessaries NOT manufactured by

W. J. RENDELL,

INVENTOR AND SOLE MAKER,

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TOOGOOD'S SPONGE BAGS.



SUPER QUALITY CHECK.

Nos.	1	2	3	4	5	6	7	8
	5/6	6/6	8/3	10/3	11/3	14/-	18/-	20/- doz.

SPECIAL QUALITY CHECK.

Nos.	1	2	3	4	5	6	7	8
	4/-	4/6	5/6	6/9	8/-	10/-	12/-	14/- doz.

No. 2140. DICE CHECK.

Nos.	1	2	3	4	5	6
	4/-	4/6	5/3	6/6	7/-	9/- doz.

THE "CLIMAX."

Proofed on both sides.

Nos.	1	2	3	4	5	6	7	8
	8/6	10/-	12/-	15/-	18/-	20/-	23/-	26/- doz.

SPONGE WRAPPERS.

SUPER QUALITY CHECK.

Without Pocket.

18 × 18	20 × 20	22 × 22	24 × 24
15/-	18/-	20/-	23/- doz.

SUPER QUALITY CHECK.

With Pocket.

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18/-	21/-	24/-	27/- doz.

THE "CLIMAX."

Proofed on both sides. Without Pocket.

20 × 20	22 × 22	24 × 24
24/-	29/-	33/- doz.

THE "CLIMAX."

Proofed on both sides. With Pocket.

20 × 20	22 × 22	24 × 24
28/-	34/-	40/- doz.

Above Prices are subject to 7½ per cent. 1 month.

WILLIAM TOOGOOD, LTD.

77 SOUTHWARK STREET, LONDON, S.E.

THE NEW

'ADAPTABLE' HOT WATER BOTTLE

(Registered Design.)



Suitable for many purposes for which the old-fashioned shape is useless

For BED WARMERS.
For CARRIAGES.
For MOTOR CARS.
For INVALIDS, &c.

Customers can have their names, &c. printed on reverse side.

LOW PRICES. BIG DISCOUNT.

Sole Manufacturers :—

The Fulham Pottery & Cheavin Filter Co., Ltd., FULHAM, LONDON, S.W.

DON'T WEAR A TRUSS

FREE TRIAL



STUART'S PLASTER-PADS are different from the painful truss, and being self-adhesive they hold the rupture in place without straps, buckles or springs—cannot slip, so cannot chafe or compress against the pelvic bone. The pads contain a wonderful medicine which is kept constantly in contact, thereby curing the most obstinate cases. Thousands have successfully treated themselves without hindrance from work and in the privacy of the home. Soft as velvet—easy to apply—inexpensive. Write to-day and "Trial Treatment," with interesting book, will be sent free.—Address:—

STUART PLASTER-PAD CO., Dept. Q 66-67 Shoe Lane, E.C.

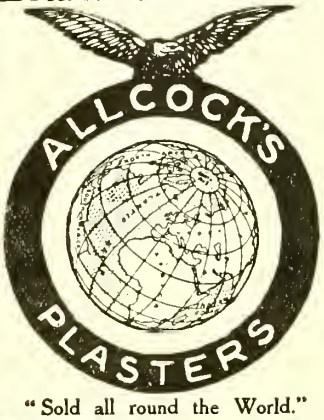
The Original and only Genuine

Allcock's POROUS PLASTERS

A REMEDY OF 60 YEARS' STANDING.

Allcock's Plasters
Allcock's Corn and Bunion Plasters
Brandreth's Pills

The Three Reliables.



"Sold all round the World."

A HANDSOME SHOWCARD will be sent free of cost and post paid on application.

ALLCOCK MANUFACTURING COMPANY
22 Hamilton Sq., Birkenhead.

MAW'S TOILET CASES FOR THE HOLIDAYS

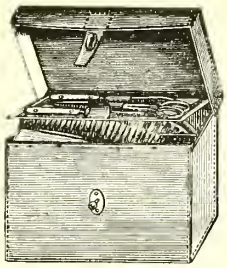


FIG. 2608.
Containing 1 x Satinwood Military Brush, Cloth and Hat Brush, Buffalo Comb, and Cutlery.
16/- each.

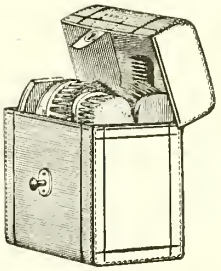


FIG. 2605.
Containing 1 x Best Satinwood Military Hair Brush, Cloth and Hat Brushes, Mirror and Comb.
15/- each.

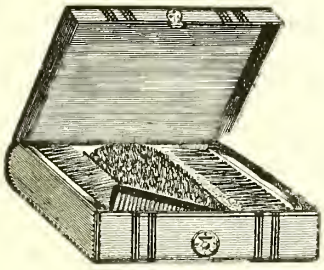


FIG. 2610.
Containing 1 x Military Hair Brush, Cloth and Hat Brush, and Comb.
14/- each.

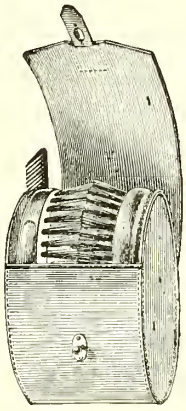


FIG. 2306.
MILITARY CASES.
Ebony, finest white bristles, **17/-** and **20/-** per case.
Good quality ditto, **8/-**, **14/-**, and **16/6** per case.
Satinwood, finest yellow bristle, **7/-**, **9/6**, **10/6** and **12/-** per case.
Good quality ditto, **5/-**, **6/-** and **8/6** per case.
CHEAP.
Ebonised ... **4/6** per case.
Satinwood... **3/6** ,,
Special Line, **2/6** ,,

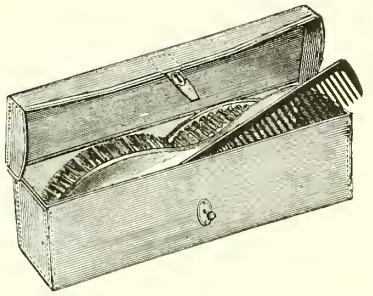
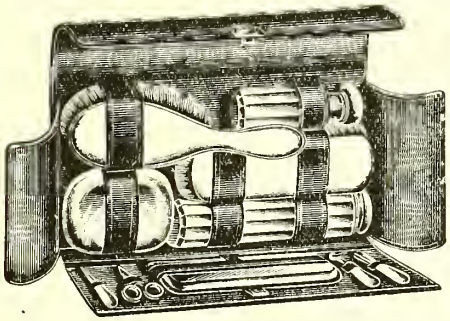
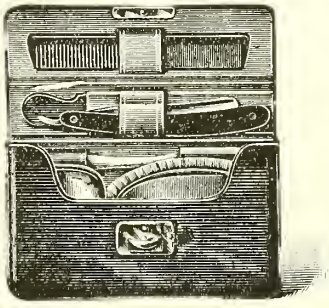


FIG. 2611.
Containing Two Brushes (handled), and Comb.
14/- each.



DRESSING CASE (LADY'S).
FIG. 2609.
A large selection in stock at **16/-**, **21/-**, **22/-**, **30/-**, **33/-**, **35/-**, **48/-** and **52/-** each, &c., &c.

ALL SOLID LEATHER—LONDON MADE
FITTED WITH
ENGLISH BRUSHES.



DRESSING CASE (GENT'S).
FIG. 2613 ... **10/6** each.
A large selection in stock at from **10/6** to **39/-** each.

S. MAW, SON & SONS,

7-12 Aldersgate Street,

LONDON, E.C.

Telegraphic Address:
"ELEVEN LONDON."

Telephone Number:
LONDON WALL
3230 (4 lines).

ANALYSE

your
expenses.

REALIZE

how much
you can save

**In Carriage
with
Free Cases.**

WHEN BUYING

Sundries

COMPARE THE

**Quality, Prices,
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Don't accept statements without
actual experience.

Send for

MAY, ROBERTS & CO.'S

(LYNCH & CO. Incorporated) LTD.

Price List

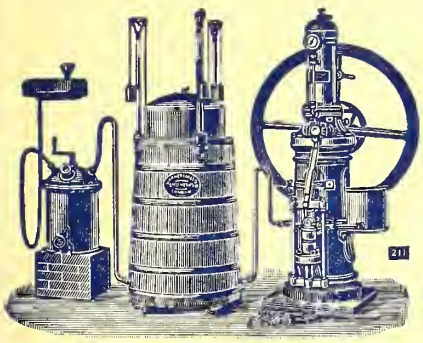
FOR AUGUST.

Will be ready in a few days.

**7, 9, 11 Clerkenwell Road,
LONDON.**

**16 Westmoreland Street,
DUBLIN.**

THE BEST HOUSE IN THE WORLD for all requirements — of the — MINERAL WATER TRADE



THE "NIAGARA."

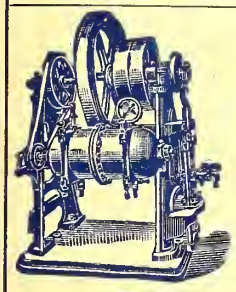
This type is fast superseding all other makes, and is used in the leading manufactories of the world.

Size	Producing capacity per day	Price, with gas-making apparatus
X	100 dozen	£30
W	300 "	£45
U	450 "	£52
T	600 "	£70
S	1,200 "	£85
R	2,500 "	£135

Are all Fitted for Hand and Power.

NOTE.—We *include* all necessary Connecting Pipes free *without extra charge*, so that the machinery is ready for work upon arrival.

FOR LARGER SIZES SEE CATALOGUE.

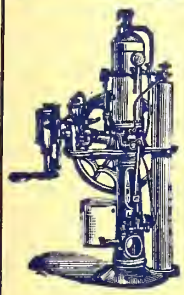


THE "LILLIPUTIAN."

Complete with Gas-making Apparatus, all pipings and connections included.

No. 1 size, producing 600 dozen in 10 hours £62 0 0
No. 2 " " 1,000 " " £75 0 0

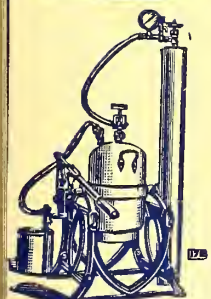
No. 1 is fitted for Hand Power; No. 2 for Motive Power.



THE "LANCASHIRE."

Complete with Gas-making Apparatus, all pipings and connections included.

No. 0 size producing 2,500 dozen in 10 hours £165 0 0
No. 1 " " 1,500 " " £131 0 0
No. 2 " " 1,200 " " £100 0 0



THE "COMPACT."

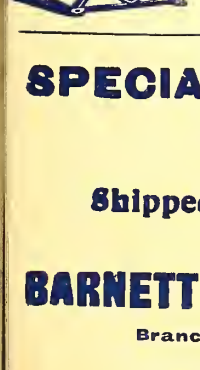
For Use with Compressed Carbonic Acid Gas.

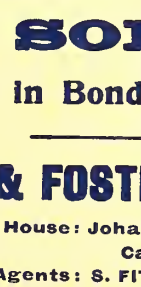
In use by the leading Chemists, Hotels, Hospitals, and Public Institutions throughout the United Kingdom.

THE MOST SUCCESSFUL MACHINE OF THE TIMES THE PERFECTION OF SIMPLICITY. AUTOMATIC CARBONATION.

PRICES:

No. 1.—Capacity 1,200 dozen per day, including Filling Machines for Bottles *and* Syphons £60 0 0
No. 2.—Capacity 600 dozen per day, including Filling Machines for Bottles *and* Syphons £48 0 0
No. —Capacity 300 dozen per day, including Filling Machines for Bottles *or* Syphons £33 0 0





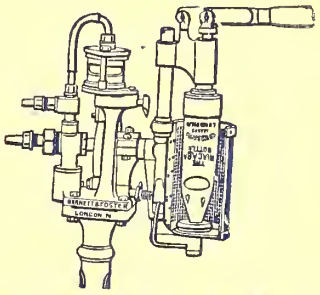
THE "CYLINDER" SODA WATER PLANT.

This is a Cheap Apparatus, designed for use with Compressed Carbonic Acid Gas; for serving Soda Water on the counter by means of a silver-plated counter stand.

PRICES FROM £15.

Specially suitable for Hotels, Chemists, Confectioners, Pastrycooks, &c.

THE "IDEAL."



With Syrup Pump £9 9 0
Without Syrup Pump £7 7 0

FILLING MACHINE, for "Codd's Niagara" and all kinds of Internal Stoppered Bottles.

The Quickest and most reliable Filling Machine on the market. SYRUPS AND FILLS AT ONE OPERATION. No Waste.

THE "GALWAY."



With Syrup Pump .. £10 10 0
Without Syrup Pump £5 5 0

FILLING MACHINE FOR SYPHONS.

THE SIMPLEST OF ANY SYPHON FILLER YET INTRODUCED.

BALL-STOPPERED BOTTLES, SYPHONS,





AND CORK BOTTLES *AT LOWEST RATES.*

Prices upon application.

SPECIALITY: "RED CLUB BRAND" SOLUBLE ESSENCES.

Shipped in Bond. . . . Prices and Samples on application.

BARNETT & FOSTER, "Niagara Works," 26T Eagle Wharf Road, London, N.

Branch House: Johannesburg, P.O. Box 1316; Manager, Mr. CARL ALBERT.
Cape Town, P.O. Box 1391; Manager, Mr. F. G. INGRAM. } Stocks held.
Indian Agents: S. FITZE & CO., Ltd., Bombay, Calcutta, Karachi.

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NUMBER 1. *ONE INSIDE SHOWCARD* to any of the enclosed patterns. The dimensions and a reference letter are marked upon the back to avoid the return of the one selected.

NUMBER 2. Three dummies ROYAL Embrocation 2/- size.
Six „ „ „ 1/- size.
Six „ UNIVERSAL „ 1/1½ size.

NUMBER 3. 250 Counter Bills, 50 R.E.P. Booklets as patterns enclosed with your name and address printed on them. (Carriage paid by Passenger Train.)

Please return this Sheet, CROSSING OUT the offer you do not accept, affixing below one of your labels and MARKING AT THE SIDE of it the reference LETTER OF THE SHOWCARD SELECTED.

By using this form, we can pass it immediately into the department that will attend to it.

Space for Business Label.

If any communication of the nature of a letter be added, then this may not be sent in an open envelope with a half-penny stamp upon it.

Address: ELLIMAN, SONS & CO., SLOUGH, ENGLAND.

DUPLICATE of this MODEL and PATTERNS sent upon receipt of POSTCARD request for same; also one each free copies (for office use), of the R.E.P. and E.F.A. Books.

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SYRUP OF FIGS

CADBURY'S COCOA
A DELICIOUS BEVERAGE AND AN INVALUABLE FOOD.

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